Vol. 7 No. 1
Fall 1983

KANSAS BUSINESS REVIEW

In this Issue:

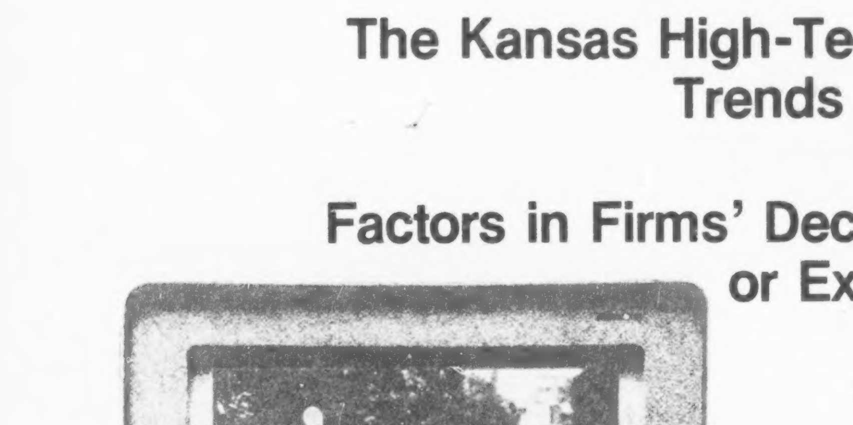
The Kansas High-Tech Labor Force: Trends and Projections

by Richard Sexton

Factors in Firms' Decisions to Locate or Expand in Kansas

Robert A. McLean
Anthony L. Redwood
Morris M. Kleiner

Economic Conditions
Economic Indicators



Institute for Economic and Business Research, The University of Kansas

KANSAS BUSINESS REVIEW

Fall 1983
Vol. 7, No. 1

In This Issue: **Page**

The Kansas High-Tech Labor Force: Trends and Projections 1
Richard Sexton

Factors in Firms' Decisions to Locate or Expand in Kansas 13
Robert A. McLean
Anthony L. Redwood
Morris M. Kleiner

Research Notes

Fiscal-Restraint Legislation: The Kansas Experience 19

***Census* Data Profiles Kansas Youth** 20

Economic Conditions

The National Review 22

The Kansas Economy 25

Economic Indicators 29

Notice of Change in Publication Schedule

With this issue, *Kansas Business Review* begins a quarterly publication schedule. Volume 7, numbers 1-4, will be further designated Fall, Winter, Spring, and Summer.

Advisory Board of the Institute for Economic and Business Research—Mr. Edward Bruske, Executive Vice-President, Kansas Association for Commerce and Industry; Executive Vice Chancellor Robert Cobb; Vice Chancellor Frances Horowitz; Professor Anthony Redwood, Director, Institute for Economic and Business Research; Mr. Charles J. Schwartz, Secretary, Kansas Department of Economic Development; Dean John O. Tollefson, School of Business; Professor Thomas J. Weiss, Chairman, Department of Economics.

Editorial Staff—Professor Anthony Redwood, Director; Michael Valk, Editor; Richard Sexton, Research Economist.

Kansas Business Review (KBR) is published four times a year. *KBR* is published by the Institute for Economic and Business Research, 317 Raymond Nichols Hall, The University of Kansas, Lawrence, Kansas 66045. It is designed by the Division of Publications, Office of University Relations.

Manuscripts for publication in *Kansas Business Review* are solicited from readers and should be sent to the editors for consideration.

Opinions expressed in the articles are those of the author(s) and do not necessarily reflect those of The University of Kansas.

CALL FOR PAPERS

The purpose of *Kansas Business Review* is to provide a forum for the dissemination of research studies and reports in the field of economics and business that would be of special interest and relevance to business persons, public officials, and academicians in Kansas and the Plains Region.

The Editorial Review Board welcomes original manuscripts, studies, and research notes from academicians and other persons in any area of economics, business, and business administration. All submissions will be reviewed initially by the editorial staff and, when judged appropriate, will be sent to referees who are knowledgeable about the content.

Manuscripts for consideration should be typed, double-spaced, and submitted in triplicate. In general, length should not exceed 3,000 words. Authors are reminded of the combined scholarly/practitioner orientation of *Kansas Business Review*, which necessitates the contents being in a form readable by that audience. Accordingly, complex statistical material—when necessary for inclusion—should be included in appendix form.

Submit manuscripts to: Editor, *Kansas Business Review*, The Institute for Economic and Business Research, 319 Raymond Nichols Hall, The University of Kansas, Lawrence, Kansas 66045.

The Kansas High-Tech Labor Force: Trends and Projections

Kansas must succeed in attracting high-tech expansion at a rate far greater than implied by these projections if the high-tech explosion is to have more than a minor effect on the state's economy.

Richard Sexton

Richard Sexton is a Research Economist with the University of Kansas Institute for Economic and Business Research. The author acknowledges the contributions and assistance of Institute staff members Robert Glass, Nancy Johnson, Rebecca Tuttle, Frank Hefner, and Michael Valk.

Introduction

Increasingly, high technology is being viewed as a solution to both the current and predicted economic ills of the '80s. Most states, including Kansas, have initiated efforts to attract high-technology industry and stimulate its development within their borders. Given the ever growing wealth of information generated on the subject, it is easy to become confused concerning the key questions upon which the high-technology promise must depend: How important is the high-technology component in today's industrial mix, and how important is it likely to become over the next several years?

This report discusses these two questions for the state of Kansas with an emphasis on high tech's implications for the state's labor force.[1] A labor force orientation is particularly apt because employment in high-tech related industries and occupations provides a convenient barometer of the present status of high-tech industry within a state and also because high-tech firms tend to be labor intensive and to have exacting demands for labor in terms of quality and skill requirements. As such, a state's extant labor pool and its demonstrated ability to train new workers with needed skills represent important locational criteria for high-technology firms and, in that respect, provide an avenue by which to investigate short-term growth potential for high-tech within a given state.

The specific labor force requirements of high-tech firms are, according to a 1982 study by Battelle, experienced scientists and engineers as well as a "readily accessible" pool of newly trained personnel in these fields.[2] Skilled, high-quality personnel in the trades, crafts, support areas, and administration are also called for.

Because the overall quality of the Kansas workforce is well-known and, in relative terms, because labor costs in Kansas are quite low, Kansas workers have represented, in the past, one of the state's primary enticements to industry. The critical question remaining, then, is whether Kansas will be able to generate the types of labor skills necessary to service the needs of growing high-technology industries within the state. Providing a basis upon which to answer this question is, therefore, the essential purpose to which this study is directed.

To investigate the questions set forth above, this study is organized in the following manner: Section I provides a description of the current Kansas labor force by age, sex, and occupational and industrial breakdowns and analyzes its growth trends over the past several years. In addition to viewing the state as a whole, particular attention is given to labor force developments in the four Kansas SMSAs (Kansas City, Kansas, Lawrence, Topeka, and Wichita) as well as Riley County because the state's best opportunities to develop high-tech industries exist within these areas.

Section II presents a five-year projection of labor force development and availability in Kansas and includes forecasts of future output from Kansas post-secondary educational institutions.

The substantial task of forecasting future labor force needs for Kansas is addressed in Section III. Projections of labor demand in 1990 are made under alternative "high-trend" or "low-trend" conditions for a list of high-tech oriented occupations and also for occupations within a group of high-tech industries.

The material in sections II and III is synthesized in Section IV wherein projected labor force availability and forecasted labor needs are compared. This section concludes with suggestions concerning the types of training programs that will be necessary to meet the state's labor requirements or to enhance the state's attractiveness to high-tech enterprise. A summary of major findings brings the study to a close.

I. Characteristics of the Kansas Labor Force

A. OVERVIEW

A state's labor force is the product of its population and a labor force participation rate. Historically, the Kansas population has been among the slowest growing in the nation. In fact, its proportion of the total U.S. population has declined over every census period during this century, falling from nearly 2.0 percent of the total in 1900 to about 1.0 percent in 1980. The participation rate in Kansas traditionally has been somewhat lower than in the nation due, in large part, to a greater proportion of retirement age persons in the state and, as well, to a lower participation rate by women in Kansas. Over recent census years, however, female participation rates in the state have risen relative to the nation. As a result, the overall Kansas participation rate now quite closely approximates the U.S. average.

In recent years, although unemployment in the state has been low relative to national levels, year-to-year growth in employment also has generally been low. This pattern has been particularly evident during the 1980s—a result of the recent recession, the impact of which was unusually severe in the Sunflower State. More specifically, since 1970, the Kansas labor force has grown 29.7 percent compared to 33.1 percent growth nationally. Over the four most recent years (1979-82), however, the labor force in Kansas has not grown at all, although nationally it has risen 5.1 percent over this same period.

Concerning recent labor force trends in the four SMSAs and Riley County, the Kansas portion of the Kansas City SMSA has experienced more rapid growth than the other urbanized regions in the state, generating labor force growth over this period of 56.5 percent, with the bulk of the increase concentrated in Johnson County. The labor force growth from 1970-1982 in the Lawrence and Wichita areas was also somewhat above the state average (33.5 and 35.4 percent, respectively). On the other hand, growth in the Topeka area (27.5 percent) and Riley County (26.9 percent) has lagged slightly behind the state average.

Overall, the urban areas of Kansas have been growing much more rapidly than have the state's rural areas. Forty-three of the 62 Kansas counties with 1970 populations under 10,000 lost population between 1970-80, even though the state's total population grew 5.1 percent over this period. It is expected that high-tech industries will locate primarily in urbanized areas, exacerbating the growth dichotomy between urban and rural regions.

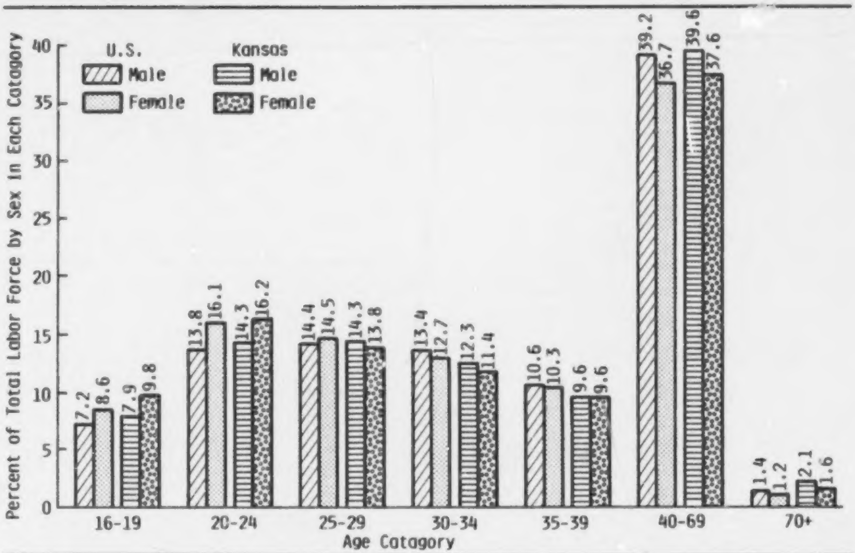
B. DEMOGRAPHICS

Over the last decade, the labor force in Kansas has grown at a proportionally faster rate than the overall population due to an increase in the rate of labor force participation. Much of this trend is due to sharply higher participation by women in the state, particularly younger women. Also, participation rates for young males, those in the 16-19 and 20-24 age groups, rose sharply over the decade, reflecting increasing numbers of part-time working students and declining rates of post-secondary enrollment.

A commonly held belief is that the Kansas work force is older on average than that of the rest of the country. Figure 1 sheds light on this matter by depicting the proportion of the male and female labor force which falls in each of the seven age categories for both Kansas and the U.S. In general, the Kansas proportions do not deviate dramatically from the national averages, but, nonetheless, the data do confirm the aging of the Kansas work force. When both sexes are combined, about 40.6 percent of the Kansas work force is 40 years or older compared with 39.4 percent for the U.S.

Interestingly, however, the proportion of the Kansas work force comprised of very young workers, those 16-24 years, is considerably higher (25.8 percent versus 22.6 percent) than it is in the U.S. Also worth noting is that in 1960 workers in this 16-24 age group comprised only 16.9 percent of the Kansas labor force. This increase indicates an influx of youth into the economy and also suggests that today's young Kansans are participating in the work force at higher rates than were their predecessors.

Figure 1
Age Distribution of the Male and Female Labor Force
U.S. and Kansas



Examination of the data on age group and sex decompositions of the work force for the Kansas urban areas indicates that, relative to the state as a whole, the work force is somewhat younger in each of the SMSAs and in Riley County. The work force in Lawrence and Riley County is particularly young due to the strong university presence in these areas. The rate of participation by females is remarkably consistent, around 55 percent, in each of the SMSAs and is somewhat higher than the 50.8 percent participation rate for the state as a whole. Higher female participation in urban areas is a reflection of the job opportunities created in the secondary and tertiary industries of a well-developed local economy.

The labor force participation rates for males in Kansas City, Wichita, and Topeka (82, 80, and 77 percent, respectively) exceed the 75 percent average for the state. The male participation rates in Lawrence and Riley County are considerably below the average—another reflection of the overt university influence in these areas.

C. OCCUPATIONAL DECOMPOSITION

As noted previously, the types of labor force skills available in a state or community have a strong influence on that area's ability to attract high-tech industry. Male and female labor force totals for eight aggregate occupational categories for the U.S., Kansas, the Kansas SMSAs, and Riley County are contained in Table 1. In examining these data for the Kansas City SMSA, readers should note that they are for the entire SMSA, not just the Kansas portion. The entire SMSA is included to provide a more appropriate inventory of high-tech skills in the Kansas City area.

In terms of the needs of high-tech firms, the most important occupational categories to examine are the professional, technical, and managerial; skilled worker; and operatives groupings. In respect to the percentages of the labor force in each of these categories, Kansas falls slightly, but perhaps not significantly, below the national average. As would be expected, each of the five Kansas urban areas ranks above the state and the nation in terms of the proportion of professional, technical, and managerial workers. Almost one third of the labor force in Lawrence and Riley County is comprised of workers in this category—once again, a reflection of the dominant presence of the University of Kansas and Kansas State University in these communities.

The skilled worker category, which includes occupations such as machine repairer and the various crafts, comprises a smaller proportion of the labor force relative to the state in each of the urban areas with the exception of the Wichita SMSA. Wichita, due to its strong manufacturing base, contains almost one fourth of the state's total inventory of skilled workers.

A fairly similar pattern emerges in respect to the operatives category. Wichita again has the highest concentration of these workers in the state, with the Kansas City area also containing a slightly-above-average proportion. Relative to the state and the other urban areas, Lawrence and Riley County have the smallest concentrations of skilled workers and operatives.

Table 1
Labor Force by Occupation Group and Sex for the United States, Kansas, Riley County, and the Kansas SMSAs

	United States (thousands of workers)	Kansas	Riley	SMSA Kansas City	SMSA Lawrence	SMSA Topeka	SMSA Wichita
Total civilian labor force	104,449.8	1,123,496	23,773	668,623	34,129	93,255	208,739
Male	59,926.5	650,132	12,342	374,783	19,227	51,465	119,726
Female	44,523.3	473,364	11,431	293,840	14,902	41,785	89,013
Professional, technical, managerial	25,716.3	265,889	7,809	172,976	10,930	23,754	52,901
Percent of total labor force	24.6	23.7	32.1	25.9	32.0	25.5	25.3
Male	15,178.9	155,440	4,458	99,877	6,494	13,252	32,548
Female	10,537.4	110,449	3,351	73,099	4,436	10,502	20,353
Sales	10,257.3	113,232	2,408	72,757	3,336	8,976	21,053
Percent of total labor force	9.8	10.1	6.3	10.9	9.8	9.6	10.1
Male	5,262.0	60,515	1,070	39,612	1,762	4,773	11,396
Female	4,995.3	52,717	1,338	33,145	1,574	4,203	9,657
Clerical	17,563.6	181,484	4,038	134,278	5,374	19,644	35,757
Percent of total labor force	16.8	16.2	17.0	20.1	15.8	21.1	17.1
Male	4,018.2	36,287	758	29,889	1,265	4,136	7,586
Female	13,545.4	145,197	3,280	104,389	4,109	15,508	28,171
Service	13,606.1	143,626	4,047	82,356	5,205	12,419	23,769
Percent of total labor force	13.0	12.8	17.0	12.3	15.3	13.3	11.4
Male	5,585.4	48,345	1,565	36,601	2,431	5,089	8,261
Female	8,020.7	95,281	2,482	45,755	2,774	7,330	15,508
Miscellaneous agricultural occupations	3,032.2	67,843	1,053	7,186	865	2,372	2,967
Percent of total labor force	2.9	6.0	4.4	1.1	2.5	2.5	1.4
Male	2,581.0	60,727	903	5,977	721	2,097	2,506
Female	451.2	7,116	150	1,209	144	275	461
Skilled workers	13,554.6	138,815	1,892	69,212	3,005	10,099	32,562
Percent of total labor force	13.0	12.4	8.0	10.4	8.8	10.8	15.6
Male	12,498.6	129,487	1,801	65,666	2,820	9,593	28,920
Female	1,056.0	9,328	91	3,546	185	506	3,642
Operatives	11,434.0	157,502	1,476	94,148	4,135	11,608	31,219
Percent of total labor force	10.9	14.0	6.2	14.1	12.1	12.5	15.0
Male	10,424.7	115,730	1,042	69,269	2,763	8,940	21,752
Female	1,009.3	41,772	434	24,879	1,372	2,668	9,467
Laborers	5,086.1	51,907	917	33,099	1,514	4,151	8,012
Percent of total labor force	4.9	4.6	3.9	5.0	4.4	4.5	3.8
Male	4,076.8	42,409	738	26,802	1,240	3,468	6,555
Female	1,009.3	9,498	179	6,297	274	683	1,457

Source: Bureau of the Census 1980 Kansas Equal Employment Opportunity (EEO) Tape

Jobs in each of these three occupational groupings tend to be male-dominated. This conclusion derives from an examination of Figure 2, which delineates the proportion of the male/female labor force in professional, technical, and managerial; skilled; and operative occupations for the U.S., Kansas, and the Kansas urban areas. Each of these aggregate categories comprises a smaller portion of the female work force in Kansas than nationally. Particularly significant is the extremely small percentages of female workers in Kansas employed in skilled crafts or as operatives. Interestingly, larger proportions of the Wichita female work force fall into these categories relative to the state as a whole and to the other urbanized areas within the state. What these data indicate is that, in most Kansas regions, larger-than-typical proportions of the female work force are locked into low-pay, low-tech sales, service, and clerical occupations.

To further identify the existing base of a high-technology labor force in Kansas and its urban areas, 33 specific occupations which embody significant high-tech characteristics were identified and examined. Twenty-five of the selected occupations are from the professional and technical category, four are from the skilled group; the remaining four fall within the operatives category. The chosen occupations are skewed towards the professional and technical end because it is often not possible to establish specifically whether the various skilled and operative occupations are, indeed, identifiable with high-tech industries, i.e., they are occupations which could be associated with either high-tech or low-tech industries.

The occupations and the number in the labor force for each are listed in Table 2 for Kansas and the urban areas. (Note again that the Kansas City data are for the entire SMSA and that those listed under each occupation are either directly working in that field or available for work.) Teachers in these fields are not included in these data. For this reason, Lawrence and Riley County, each of which had a high concentration of professional and technical occupations, actually have comparatively few people working directly in high-tech oriented occupations once the university element is excluded—a fact which is disappointing because research-oriented universities elsewhere have acted as magnets in attracting research-oriented and other types of high-tech firms.

By this occupational breakdown, Kansas has about 41,000 workers with high-tech related skills, about 3.7 percent of the work force. Nationally, 4.1 percent of the work force emanates from these occupations. As such, by comparative standards, the Kansas percentage represents a relatively small base of high-tech skills from which to draw upon and suggests a potential problem the state faces in attempting to stimulate high-tech development. By far the largest concentration of high-tech skills in Kansas is in the Wichita area which, thanks principally to the aircraft industry, has 13,445 people or 6.4 percent of its labor force in high-tech occupations, about

Figure 2
Proportion of Male and Female Work Force in Selected Occupational Categories
U.S. and Kansas

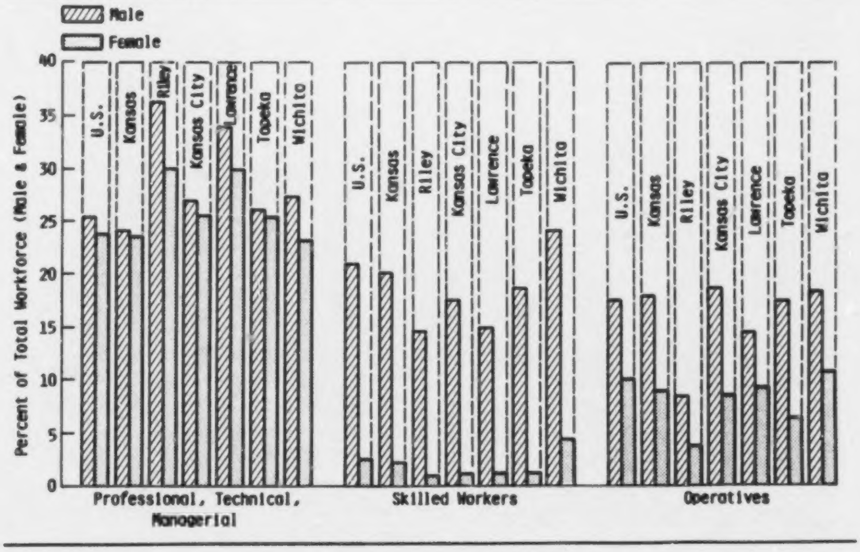


Table 2

The High-Technology Work Force in Kansas, Riley County, and the Kansas SMSAs

Occupation	Kansas	Riley County	SMSAs			
			Kansas City*	Lawrence	Topeka	Wichita
Aeronautical and astronautical engineers	2,235	0	153	0	4	2,084
Chemical engineers	344	6	281	70	23	99
Civil engineers	2,435	36	1,848	39	390	370
Electrical engineers	2,074	8	1,904	39	238	705
Industrial engineers	1,985	0	1,259	14	54	944
Mechanical engineers	1,467	8	1,306	25	62	448
Metallurgical engineers	100	0	74	0	0	43
Mining engineers	40	0	11	0	0	0
Petroleum engineers	415	0	59	0	0	86
Agricultural scientists	392	86	111	8	45	18
Biological scientists	350	52	264	35	45	36
Chemists	740	23	719	30	81	111
Geologists	640	12	72	72	19	364
Medical scientists	174	49	102	0	6	55
Physicists	32	0	42	5	0	16
Mathematicians and other math specialists	91	0	0	0	0	78
Statisticians	201	0	200	6	46	36
Drafters	3,701	63	2,558	101	235	906
Electrical and electronic technicians	1,899	44	1,583	56	118	566
Industrial engineering technicians	39	0	36	0	0	18
Mechanical engineering technicians	173	0	100	15	17	65
Medical technicians and laboratory technologists	2,639	70	1,751	68	270	661
Tool programmers	72	0	20	0	0	58
Computer programmers	3,008	126	2,412	147	323	870
Computer systems analysts	1,487	24	1,188	49	207	535
Computer operators	4,215	97	2,072	149	505	926
Peripheral EDP equipment operators	161	0	235	6	45	24
Electricians	6,274	73	3,514	192	577	1,462
Data processing machine mechanics	467	11	417	21	84	127
Office machine repairs	453	18	336	0	47	131
Tool and die makers	1,970	0	770	27	12	1,330
Electrical and electronic assemblers	773	7	924	27	3	282
Numerical control machine tool operators	64	0	12	0	0	31
Total	41,110	813	28,333	1,052	3,556	13,445
% of total labor force	3.7	3.4	4.2	3.1	3.8	6.4

* Includes Missouri portion

one third of the total in the state. The Kansas City area has over 28,000 workers with high-tech skills, although the percentage concentration of high-tech workers is considerably lower than in Wichita.

D. DECOMPOSITION BY HIGH-TECH INDUSTRY

A number of attempts have been made to pinpoint which industries would fall into a high-technology classification.[3] Efforts usually revolve around identification by standard industrial classification (SIC) codes of industries which satisfy certain predetermined high-tech criteria. For example, the criteria listed in a report by the Kansas Department of Human Resources are as follows:

1. A high proportion of scientists and engineers in the workforce.
2. Highly sophisticated technology incorporated into products.
3. Firms of relatively small size with high growth rates and a high ratio of research and development expenditures to sales.
4. Products tend to incorporate technological innovation, have a high degree of value-added, and are often recognized as "state of the art" in a given line.[4]

For purposes of this study, 26 three-digit SIC industries were classified as high-tech oriented. Table 3 lists the employment and number of establishments in each of these industries for Kansas, the Kansas portion of the Kansas City SMSA,[5] and the Wichita SMSA. All but two of the designated high-tech industries are in manufacturing. Table 3 includes no information for Riley County, the Lawrence SMSA, or the Topeka SMSA because no employment was indicated in any of the manufacturing-based, high-tech industries for these locations. However, the Census Bureau does not separately list data for any industry with less than 50 employees. Therefore, no listing need not imply the complete absence of that industry from these areas, but it does indicate that the industry is very small, if it exists at all.

Because the Census Bureau is prohibited from releasing employment data when it may reveal information about the operations of individual firms, exact numbers of employees are often not provided; rather, the information is given only for an interval. Nonetheless, some valuable insight may be gained from an examination of Table 3. At the outset, it identifies further the extent to which Kansas must develop a high-technology base. Based on the 26 industry classification, there are 290 establishments in high-tech manufacturing industries in the state; that is, about 10 percent of the state's 2,919 manufacturing establishments are in high-tech related industries. The high-tech establishments employ approximately 63,000 workers or about 8.4 percent of the total Kansas nonpublic sector employment. The aircraft industry accounts for almost exactly two thirds of the state's total employment in high-tech industries, with about 96 percent of Kansas aircraft employment being located in Wichita.

Relative to aircraft, all other high-tech manufacturing industries in Kansas are very small. The second largest is communication equipment—primarily TV and radio manufacturing—which employed 3,376 workers in 1981. Much of this activity is concentrated in Kansas City. The refrigeration and service machinery industry employed 2,382 workers in 1981, with the primary concentration of activity in Wichita. Only one other high-tech manufacturing industry, miscellaneous electronic equipment and supplies (e.g., storage batteries and engine components), employed more than 2,000 workers in the state. The primary concentration in this industry was centered in Kansas City, with some additional activity taking place in Montgomery and Saline counties.

The Kansas portion of the Kansas City SMSA contains a smattering of activity in a number of high-tech industries. Eighty-five high-tech manufacturing establishments were indicated in 1981, about 30 percent of the state's total. None of the industries, however, is a major employer on a scale comparable to the aircraft industry in Wichita.

Wichita, however, has not successfully expanded its high-tech base beyond aircraft. Only 27 nonaircraft-related, high-tech manufacturing firms were reported in the SMSA, and none generated significant employment in the area. Also worth noting is that none of the high-tech firms reported in the Wichita SMSA are located in Butler County.

Finally, the Riley County, Lawrence, and Topeka areas are conspicuous by their absence from the table. Although, as Table 2 indicated, there are some workers in these areas with high-tech related skills, there is literally no large-scale base of high-tech manufacturing industry, according to the definition employed here, in any of these areas.

II. A Five-Year Projection of the Kansas Labor Force Potential

Since 1970, the Kansas civilian labor force (those employed and those unemployed but actively seeking work) has increased at an average annual rate of 2.0 percent. A considerable amount of variability has existed, how-

Table 3

Employment and Number of High-Technology Establishments in Kansas, the Kansas Portion of the Kansas City SMSA, and the Wichita SMSA for 1981

SIC	Industry Description	Kansas # of Employees	Kansas # of Establishments	Kansas City SMSA (Kansas Portion) # of Employees	Kansas City SMSA (Kansas Portion) # of Establishments	Wichita SMSA # of Employees	Wichita SMSA # of Establishments
282	Plastics materials & synthetics	100-299	4	20-99	2	—	—
283	Drugs	1865	13	600-1248	8	—	—
284	Soap, cleaners, & toilet goods	1292	19	1600-2499	8	—	—
348	Ordnance & accessories	500-999	2	—	—	—	—
357	Office computing & accounting machines	1702	12	100-249	7	1000-2499	3
358	Refrigeration and service machinery	2382	14	100-249	3	1000-2499	4
361	Electric distribution equipment	100-249	4	—	—	—	—
362	Electrical industrial apparatus	1584	13	20-99	2	100-249	2
363	Household appliances	200-499	4	250-499	1	—	—
364	Electric lighting & wiring equipment	907	10	120-348	3	20-99	2
365	Radio & TV receiving equipment	73	8	—	—	—	—
366	Communication equipment	3376	20	2500-4999	9	116	4
367	Electronic components & accessories	100-249	36	929-1078	26	20-99	3
369	Misc. electronic equipment & supplies	2228	14	500-998	9	—	—
372	Aircraft & parts	42,195	49	—	—	40,390	37
376	Guided missiles & space vehicle parts	—	—	—	—	—	—
379	Misc. transportation equipment	628	17	—	—	—	—
381	Engineering & scientific instruments	607	6	—	—	586	5
382	Measuring & controlling devices	460	8	20-99	2	250-499	3
383	Optical instruments & lenses	20-99	2	—	—	—	—
384	Medical instruments & supplies	1731	19	500-999	5	—	—
385	Ophthalmic goods	20-99	3	—	—	—	—
386	Photographic equip. & supplies	250-499	3	—	—	100-249	1
387	Watches, clocks & watchcases	—	—	—	—	—	—
Total high-tech manufacturing establishments		—	290	—	85	—	64
737	Computer & data processing services	2772	145	691	44	1308	49
739	Miscellaneous business services	6767	688	2030	209	2119	184

Source: *Kansas County Business Patterns 1981*, Bureau of the Census.

ever, among the year-to-year percentage changes, due primarily to business-cycle effects. For example, Kansas suffered relatively severe recessions in 1970-71 and 1980-82. Labor force growth over each of these periods was insignificant due to people leaving the work force because of the lack of employment opportunities. Examining only the eight non-recession years since 1970 indicates an average annual growth rate in the labor force of 3.2 percent. As such, it becomes obvious that labor force participation is very much a function of economic conditions and employment opportunities. To accurately forecast actual labor force totals, then, necessitates a multi-year forecast of future economic conditions, which is arguably impossible to do and, regardless, is certainly beyond the scope of this project.

Instead, what is offered in this section is a population-based projection of the 1987 labor force in Kansas assuming "average" economic conditions and the continuance of recent trends in the labor force participation rate by various demographic subgroups. Also provided is some indication of the magnitude of inflow of skilled workers in the state's labor pool measured in terms of expected annual degree output over the next five years from the state's post-secondary educational institutions.

A. POPULATION AND LABOR FORCE PROJECTIONS BY AGE GROUP

The Kansas population has grown within a narrow band from 3.2 to 6.3 percent over each decade since 1920. Population declined from 1930-40 during the Depression and Dust Bowl era, and it rose significantly between 1950-60 as part of the baby-boom phenomenon. No such extraordinary trends appear to be in the offing during the 1980s, but a ripple upturn in population is, in fact, occurring due to the baby-boom generation now bearing children. This trend is borne out, for example, by recent marked increases in Kansas public school enrollments, e.g., 1982 kindergarten enrollment at 32,629 was 1,847 students above grade one enrollments which, in turn, exceeded grade two registrants by 1,173. Finally, there were also 1,189 more second graders than third graders, meaning that the 1982 kindergarten class exceeded the third grade class by 4,209 students. However, until this "mini baby-boom" enters the work force, growth in the working age population should be relatively stable.

No comprehensive, up-to-date population forecasts presently exist for Kansas. Therefore, in order to project the size of the labor force by age and sex classifications, it is first necessary to develop a set of population parameters for the state. This task involves projecting current population by age groups, taking into account expected mortality rates and migration trends.

Recent migration patterns for Kansas reveal that considerable mobility exists within the Kansas labor force, with nearly one fifth of the workers leaving the state during the five-year period from 1975-79. However, an even greater portion of workers entered the state during this period creating, as a result, net inmigration. For each year during this interval, net migration percentages were very low, reflective of the near offset between inflows and outflows. For example, the annual net migration rates for this period varied from a 0.1 percent outmigration in 1977-78 to a 0.9 percent inmigration for 1978-79. Therefore, on the basis of the small magnitude of past net migration percentages and because of the difficulty in projecting future migration trends without knowing future economic conditions in Kansas and the other states, migratory effects were not considered in making Kansas population projections.

Projections for 1987 by five-year age groups for the Kansas adult population are contained in part (a) of Table 4. The projections reveal that, although total growth in the state's *working age* population is expected to be only 1.3 percent, significant changes are likely to occur in the age composition of the population. These changes primarily reflect the movement across age groups by the baby-boom generation. In particular, the number of young Kansas adults—those ages 16-24—is expected to decline nearly 20 percent by 1987. These reductions, though, are likely to be more than offset by marked increases in the number of people in the middle age brackets—those encompassing ages 25-44. As the table indicates, increases ranging from 25-35 percent are expected in these age groups. Finally, little change in population is expected in the 50-69 age class although some shifting among individual brackets is indicated.

Labor force projections for Kansas were derived from the population projections and are contained in part (b) of Table 4. These labor force forecasts should be interpreted somewhat circumspectly because their construction demanded inputing labor force participation rates for each age group. These rates, as noted, are quite dependent upon economic conditions which cannot be projected accurately to 1987. As such, the male labor force projections were based upon the 1980 male labor force participation rates, the rationale being that male participation rates have not fluctuated widely in recent years except in reaction to significant exogenous shocks, such as military conscriptions. Furthermore, economic conditions in Kansas in 1980 were marked by the beginning of the severe 1980-82 recession, but, in the immediately preceding years, the state had enjoyed

Table 4

a) Projected Population for Kansas in 1987

Age Group	1980 Population	1987 Population	Percent Change
16-19	179,398	140,465	−21.7%
20-24	232,788	192,356	−17.4
25-29	202,671	233,528	15.2
30-34	171,947	213,191	24.0
35-39	135,209	182,256	34.8
40-44	114,441	145,268	26.9
45-49	112,515	116,092	3.2
50-54	118,914	105,817	−11.0
55-59	119,932	107,972	10.0
60-69	200,241	199,767	0.1
70 & over	212,055	186,429	−12.1
Total population 16 and over	1,800,111	1,823,141	1.3%

b) Projected Civilian Labor Force by Sex for Kansas in 1987

	Projected 1987 Civilian Labor Force		Percent Change From 1980		
Age Group	Male	Female	Male	Female	Total Labor Force
16-19	40,415	39,760	−21.2%	−14.3%	−17.9%
20-24	76,096	65,917	−18.1	−14.1	−16.3
25-29	108,033	76,992	16.6	17.7	17.0
30-34	100,245	68,871	25.3	27.2	26.1
35-39	85,526	60,924	37.8	33.7	36.0
40-69	254,052	189,875	− 1.4	6.8	2.0
70 & Over	11,889	7,888	−12.2	7.6	− 5.2
Total	676,256	510,227	4.0%	7.8%	5.6%

Sources: 1980 age data from 1980 U.S. Census, *Kansas General Population Characteristics*; projections made by the Institute for Economic and Business Research.

several years of sustained prosperity. As such, 1980 was a transition year for the Kansas economy, and the male participation rates are probably reflective of average economic conditions. They would be expected to be slightly higher (lower) during an expansion (a recession).

In projecting the female work force, participation rates for women in 1980 were adjusted upward in reflection of trends towards increasing female participation. The adjustments were made according to increases in participation rates by age group recorded for the 1970-80 period and upon recommendations provided by University of Kansas labor force experts. The largest adjustments were made for the younger age groups—a reflection that the work habits of older Kansans are relatively implanted.

Examining the projections themselves indicates that the total labor force is expected to grow 5.6 percent from 1980-87. The larger increase is in the female work force, which is expected to grow 7.8 percent compared to a projected 4.0 percent growth for males. Distribution of the labor force among age groups reflects the population trends identified earlier. Substantial declines in the numbers of both male and female young workers is indicated, though this trend is more than offset by a major increase in the number of young-to-middle-aged workers. The number of males in the "mature worker" category—those aged 40-69—is expected to decline slightly, but a modest increase is suggested in the number of female workers in this category.

By historical standards, the projected labor force growth is not large. For example, during the 1970-77 period, a time of relatively rapid expansion, the Kansas labor force grew by 22.4 percent. Therefore, labor force shortages may become a problem in Kansas during the next several years if the state's economy moves into a sustained, expansionary phase. A more positive inference from these projections is that the movement of more workers into the high productivity, middle-age brackets, with fewer very young and very old workers, suggests that the 1987 work force will be more skilled and relatively more productive than the present and recently past work forces.

Furthermore, continued increases in the rate of female labor force participation sharpens the need to create job opportunities in the state for women and to focus training of female workers away from low-pay, low-skill occupations to the higher-skill, technical and professional occupations which are apt to face the greatest demand increases in the ensuing decades.

B. A FIVE-YEAR PROJECTION OF PROFESSIONAL AND TECHNICAL WORKERS PRODUCED BY KANSAS POST-SECONDARY INSTITUTIONS

As discussed earlier, high-technology firms require greater-than-average proportions of skilled and technically-oriented workers. In addition, they demand high overall quality in their work force. As such, the magnitude and types of skills available in the work force are, perhaps, an even more important factor in attracting high-tech firms than is overall labor force availability. The types of skills and occupations available in the present work force were examined in an earlier section to this report. The general finding derived from that examination was that the state does not currently have a large inventory of workers with high-tech related skills. This section looks at the short-term prospects for generating additional skilled and professional workers from the state's post-secondary educational institutions. This investigation is relevant to the issue of Kansas' high-tech potential because a state's ability to consistently produce needed supplies of workers with desired skills and specializations is an important element in attracting and retaining businesses, e.g., a reserve of such workers enables businesses to reduce recruitment costs and develop a stable work force.

The methodology employed in making this assessment involved developing a five-year projection of output from Kansas' post-secondary institutions. Output, measured in terms of the number of degrees awarded by type of degree, was projected individually for each Regents institution and jointly for the four-year independent colleges and universities; community colleges and private two-year institutions; and vocational institutes.

The rationale for this approach is that Kansas post-secondary educational institutions represent the principal and most readily available source of skilled and professional workers for Kansas firms. As such, the projections contained in this section represent an approximate inventory of the number and types of new, educated workers from which Kansas firms can conveniently draw over the next several years.

Results derived from various projecting techniques are presented in Tables 5 through 8 which, respectively, contain projections for bachelors degrees, graduate and professional degrees, associate degrees, and vocational degrees. (Differences in the nature and magnitude of the data available for the various post-secondary educational programs in the state necessitated use of several alternative projection methodologies which are described in some detail in the report to the High Technology Task Force on which this article is based. Readers interested in these details should refer to that report.)

Table 5 contains projections of bachelors degrees by degree type to be awarded from Kansas universities for 1983-87. The projected number of total degree awards should be highly accurate because, for each year except 1987, future degree recipients for 1983-87 are already in the post-secondary educational "pipeline." The accuracy of the type-of-degree projections depends upon the constancy over the next five years of the current pattern of degree distribution by type.

More than 59,000 bachelors degrees are expected to be awarded within the state over the period. Output of degrees is expected to decline in each year after 1983, with the exception of a mild upturn in 1986. The trend towards declining numbers of undergraduate degrees holds for each Regents university except the University of Kansas (KU) and Wichita State University (WSU) at which the numbers are projected to remain relatively stable over the five-year period. Some decline in degree production is expected for the group of independent universities as well. These projected declines are quite consistent with recent decreases in the number of graduating seniors in the state.

Business degrees are expected to account for over one fifth of the total bachelors degrees awarded over this period with KU and Kansas State University (KSU) being the primary producers. However, as a proportion of the total degrees issued within the particular university, Emporia State University (ESU) and Fort Hays State University (FSU) have more dominant business programs.

Education degrees are expected to be second largest, totaling nearly 9,600 over 1983-87. As a group, the independent universities will produce a plurality of these degrees.

Table 6
Professional and Graduate Degrees To Be Awarded from Kansas Universities: Projections to 1987

	Graduate					Professional				
	1983	1984	1985	1986	1987	1983	1984	1985	1986	1987
Emporia State University	343	336	340	340	340					
Fort Hays State	164	183	174	174	174					
Kansas State University	1,003	935	969	969	969	101	97	99	99	99
Pittsburg State University	248	265	257	257	257					
University of Kansas	1,342	1,486	1,434	1,434	1,434	173	167	170	170	170
Wichita State University	470	474	472	472	472					
Washburn University	12	14	13	13	13	167	165	166	166	166
Four-Year Private Universities	7	7	7	7	7					
Totals	3,629	3,700	3,666	3,666	3,666	441	429	435	435	435

Projections made by the Institute for Economic and Business Research.

Data Sources: Kansas Legislative Research Department, *Kansas Postsecondary Education Profile*, Second Edition, 1983 and *Kansas Higher Education Enrollment Report*, Fall 1982.

High-tech related degrees—those in engineering, the sciences, and mathematics—do not presently constitute major portions of the total number of bachelors degrees awarded by Kansas universities. If this pattern continues, approximately 4,700 new engineering degrees, 4,200 new science degrees, and 400 new math degrees will be issued during 1983-87 by Kansas universities. Almost all engineering degrees issued in the state presently emanate from KSU, KU, WSU, and Pittsburg State University (PSU). Although all the universities have programs in the sciences, KSU and KU are the primary degree issuers. No university in the state presently issues a significant number of math degrees.

Graduate and professional degree projections for Kansas are contained in Table 6. The state's most significant graduate programs are at KU and KSU and, to a lesser extent, at WSU. Graduate programs do exist at each of the other Regents institutions, but they are concentrated primarily in business, education, library science, and other fields not closely related to high-tech.

Table 5
Number of Bachelors Degrees by Type To Be Awarded from Kansas Universities: Projections to 1987

Year	Total	Business	Education	Science	Mathematics	Health	Engineering	Social Sciences
1983	12,468	2,577	2,024	882	85	1,126	963	818
1984	12,191	2,574	2,002	872	87	1,149	929	812
1985	11,502	2,381	1,861	800	79	1,028	940	760
1986	11,675	2,416	1,860	816	81	1,103	950	772
1987	11,489	2,388	1,839	813	80	1,089	920	765
Total	59,325	12,336	9,586	4,183	412	5,495	4,702	3,927
Percent of total degrees awarded		20.8	16.2	7.1	0.7	9.3	7.9	6.6

Projections by the Institute for Economic and Business Research.

Sources: Kansas Legislative Research Department, *Kansas Postsecondary Education Profile*, Second Edition, 1983, and *Kansas Higher Education Enrollment Report*, Fall 1982.

Graduate degrees (masters, specialist, and Ph.D.) awarded from Kansas universities for each year from 1983-87 are expected to total in the range from 3,600-3,700. About 1,400 or 39 percent of these degrees will be produced from KU, with nearly 1,000 or about 27 percent being awarded at KSU.

Professional degrees (those in medicine, veterinary medicine, and law) are exclusively awarded in Kansas from KU, KSU, and Washburn University. Combined, these are expected to total about 435 for each year through 1987. These types of professional skills, however, are probably ancillary to high-technology industries.

Summary information on projected two-year or associate degrees to be awarded from Kansas colleges is contained in Table 7. The degrees are awarded primarily through the state's community colleges, private two-year colleges, and the Kansas Technical Institute.

The projections forecast that all associate degrees awarded by the two-year colleges will total about 28,000 over 1983-87, with the output tending to increase annually. High-tech degrees, those in engineering and possibly the health fields, however, comprise a relatively small percentage of the total degrees to be awarded. Note that some double counting is likely to enter these figures because many two-year degree recipients go on to earn four-year degrees at other institutions. Hence, they are included in those projections as well, thereby making it impossible to aggregate degrees across the various types.

Table 7

Number of Associate Degrees by Type To Be Awarded from Kansas Community Colleges, Private Two-Year Colleges, and the Kansas Technical Institute: Projections to 1987 (Percent Distribution by Degree Type Based on 1980-81 School Year)

Year	Total[a]	Business	Liberal Studies	Health	Engineering
1983	4,799	272	2,754	557	145
1984	4,895	250	2,801	573	150
1985	5,006	291	2,848	600	157
1986	5,103	298	2,895	616	163
1987	5,199	306	2,942	633	167
Total	25,002	1,477	14,240	2,979	782
Percent of total degrees awarded		5.8	57.0	11.9	3.1

[a] Washburn University, the Regents institutions, and the private four-year universities also offer associates degrees which are not included in these totals. For the 1980-81 school year, 458 associates degrees were granted by these schools.

Projections by the Institute for Economic and Business Research.

Information Sources: Kansas Legislative Research Department, *Kansas Postsecondary Education Profile*, Second Edition, 1983, and *Kansas Higher Education Enrollment Report*, Fall 1982.

Finally, in respect to vocational programs, no significant trends in program completions are evident based upon examination of recent data. Therefore, no unique projections for individual years were possible. The data in Table 8 represent estimates for the five-year total for 1983-87 and were based on averages computed for the prior years. Program completions are expected to total about 17,490 with nearly one half in industrial education programs and another 25 percent in health fields. These training programs often represent terminal degrees for their recipients, and, as such, they are primary sources for skilled craftsmen and operatives, both of which are important to high-tech development.

Table 8

Projected Total Number of Vocational-Technical Degrees To Be Awarded from Kansas Institutions, 1983-87

Field	% of Total Degrees by Field	Projected # of Degrees
Agriculture	2.5%	440
Distributive education	1.5	263
Health	24.7	4,320
Occupational home economics	4.0	700
Office occupations	14.8	2,595
Technical education	2.8	490
Industrial education	49.6	8,680
Total	100%	17,490

Projections made by the Institute for Economic and Business Research.

Data Source: Kansas Legislative Research Department, *Kansas Post-Secondary Education Profile*, Second Edition, 1983.

Total degrees projected to be awarded from Kansas post-secondary institutions for the period 1983-87 are summarized in Table 9. As noted, these totals cannot be summed to yield a grand total. Nonetheless, the table provides some indication of the magnitude of new professional and skilled workers who might conceivably enter the Kansas labor force over the next five years. Interestingly, a large portion of these new, well-educated entrants will be women because women currently comprise the majority of students matriculating at the independent colleges, the two-year universities, and most of the Regents universities.

Table 9

Summary of Total Degrees Projected To Be Awarded from Kansas Post-Secondary Institutions for 1983-87

Degree Type	Projected Total Awarded: 1983-87
Bachelors	59,325
Graduate	18,327
Professional	1,391
Associate	25,002
Voc-Ed	17,490

III. Employment in High-Technology Occupations and High-Technology Industries: Projections for Kansas to 1990

Two distinct sets of projections are made in this section. One set is for the 33 high-tech oriented occupations discussed earlier and identified in Table 2. The other is for the high-technology industries identified in Table 3. Both sets develop alternative "high-trend" and "low-trend" scenarios based upon different assumptions regarding future economic conditions. The basic input to both projected sets is a base of national industrial and occupational employment forecasts to 1990 prepared by the Bureau of Labor Statistics (BLS).[6] The BLS forecasts were then adjusted to make them more applicable to the Kansas situation.

The purpose of these projections is to provide an indication of the types of labor demands which high-technology may place on Kansas. Alternative trends are projected in recognition of the difficulty of accurately predicting long-run economic conditions. In many respects, of course, Kansans will determine through the types of economic policies and high-technology initiatives they pursue whether a high-growth or low-growth trend will be a reality.

A. PROJECTED EMPLOYMENT BY HIGH-TECHNOLOGY OCCUPATIONS

Employment trends in the U.S. and Kansas for the 33 high-tech occupations from 1970-80 with alternative projections for 1980-90 are contained in Table 10. The U.S. projections are those computed by the BLS. The high-trend projections are based upon rates of economic growth for the rest of the decade comparable to those experienced during the prosperous 1955-68 period whereas the low-trend projections are more reflective of the less robust economy which characterized the 1973-80 period. In actuality, the two alternative trends often produce quite similar sets of projections. (The interested reader should consult the referenced BLS publications for further discussion of the key assumptions involved in making the national projections.)

In developing projections for Kansas, the national forecasts for each occupation were modified to reflect past differences in growth trends between the U.S. and Kansas. The

Table 10

Employment in High-Technology Occupations for the United States and Kansas for 1970 and 1980 with Projections for Kansas to 1990

Occupation	US Employment (thousands) 1970	1980	% Change	Kansas Employment 1970	1980	% Change	Projected Kansas Employment 1990 Low Trend	% Change	1990 High Trend	% Change
Aeronautical and astronautical engineers	68.9	68.0	−1.31%	1,569	2,235	42.45%	4,184	87.2%	4,269	91.0%
Chemical engineers	52.6	55.5	5.51	381	344	−9.71	372	8.0	381	10.8
Civil engineers	175.1	165.4	−5.54	2,161	2,435	12.68	3,504	43.9	3,538	45.3
Electrical engineers	286.0	326.7	14.23	1,533	2,074	35.29	3,240	56.2	3,289	58.6
Industrial engineers	188.0	115.9	−38.35	1,459	1,985	36.05	2,497	25.8*	2,541	28.0*
Mechanical engineers	181.3	212.9	17.43	1,035	1,467	41.74	2,245	53.0	2,280	55.4
Metallurgical engineers	15.5	15.4	−0.65	97	100	3.09	136	36.1	138	38.4
Mining engineers	4.6	6.1	32.61	12	40	233.33	55	37.7*	57	42.6*
Petroleum engineers	11.1	17.9	61.26	215	415	93.02	737	77.5	731	76.1
Agricultural scientists	12.9	19.8	53.49	127	392	208.66	428	9.1*	437	11.5*
Biological scientists	29.7	44.8	50.84	245	350	42.86	371	6.1	382	9.0
Chemists	110.2	93.6	−15.06	693	740	6.78	1,054	42.4	1,070	44.6
Geologists	20.1	39.8	98.01	399	640	60.40	833	30.1*	836	30.7*
Medical scientists	—	8.1	—	—	174	—	201	15.6*	202	15.8*
Physicists	22.3	20.5	−8.07	48	32	−33.33	36	12.5*	37	14.8*
Mathematicians & other math specialists	7.8	17.7	126.92	10	91	810.00	103	13.0*	105	15.3*
Statisticians	23.0	26.5	15.22	110	201	82.73	235	16.7*	240	19.3*
Drafters	294.5	321.6	9.20	2,329	3,701	58.91	6,573	77.6	6,584	77.9
Electrical and electronic technicians	158.9	359.5	126.24	888	1,899	113.85	2,228	17.3	2,302	21.2
Indust. engineering tech.	20.9	32.4	55.02	303	39	−87.13	48	24.0*	49	25.7*
Mechan. engineering tech.	13.5	48.5	259.26	63	173	174.60	217	25.5*	222	28.1*
Med. techs & lab techs	119.4	193.2	61.81	1,263	2,639	108.95	4,792	81.6	4,803	82.0
Tool programmers	3.2	11.9	271.88	30	72	140.00	83	15.8*	85	17.9*
Computer programmers	163.9	228.2	39.23	1,020	3,008	194.90	4,479	48.9*	4,566	51.8*
Comp. systems analysts	81.0	204.6	152.59	429	1,487	256.62	24494	67.7*	2,549	71.4*
Computer operators	—	184.6	—	—	4,215	—	7,233	71.6*	7,376	75.0*
Peripheral EDP equipment operators	—	48.7	—	—	161	—	232	44.0*	244	51.6*
Electricians	483.1	560.3	15.98	4,150	6,274	51.18	9,706	54.7	9,869	57.3
Data processing machine mechanics	32.0	83.0	159.38	271	467	72.32	902	93.2*	938	100.8*
Office machine repairs	40.0	55.4	38.50	454	453	−0.22	724	59.8*	747	65.0*
Tool & die makers	206.8	166.0	−19.73	1,885	1,970	4.51	2,602	32.1	2,656	34.8
Electrical & electronic assemblers	—	233.1	—	—	773	—	904	17.0*	917	18.6*
Numerical control machine operators	—	52.7	—	—	64	—	74	16.1*	76	19.2*
Total	2,826.3	4,038.3	42.9%	23,239	41,110	76.9%	63,161	53.6%	64,314	56.9%

* Unadjusted national projection.

modifications involved computing the percent change in employment from 1970-80 for each occupation for the U.S. and Kansas and adjusting the 1980-90 projected national growth rates by the difference in the 1970-80 actual growth rates between the U.S. and Kansas. For certain occupations, this adjustment procedure yielded nonintuitive results primarily due to unrealistic 1970-80 percentage employment growth rates for Kansas caused by the small existing base of workers in the occupation generating large employment swings on a percentage basis. When these instances occurred, the adjustment mechanism was omitted, and the U.S. projections were directly applied to Kansas.

Examination of the past growth trends for high-tech occupations provided in Table 10 indicates that employment in the 33 selected occupations grew by 17,871 workers or 76.9 percent in Kansas between 1970-80. The Kansas growth rate compares favorably with the 42.9 percent growth recorded in the U.S. for these occupations over the same period. The proportion of total jobs in Kansas provided by the high-tech occupations rose from 2.6 percent to 3.5 percent over this period. Kansas' lack of a substantial high-tech base is reaffirmed, however, by noting that the state's proportionate high-tech employment remained well below the national proportions, which rose from 3.6 to 4.1 percent during the '70s.

This study's projections indicate continued rapid growth in demand for high-tech occupations in Kansas between 1980-90. High-trend projections call for 56.9 percent job growth over the '80s (23,404 new jobs) while, under the low-trend projections, 53.6 percent growth is expected (22,051 new jobs). If these projections materialize, the high-tech occupations will account for 5.4 percent of the total jobs in Kansas under the high-trend scenario and 5.3 percent under the low-trend. The relative similarity of the projections under the two scenarios is, in part, a reflection of the high degree of immunity from cyclical perturbations which these types of jobs tend to enjoy.

Examination of growth trends for individual occupations can often be misleading due to the small-base problem alluded to earlier. For this reason, the occupations listed in Table 10 were grouped into four classifications (engineers, scientists, computer personnel, and other technical occupations) to facilitate further analysis. Information on employment by these classifications is contained in Table 11. Computer-related positions were the most rapidly growing of all high-tech oriented occupations between 1970-80, recording an astronomical 442.9 percent increase during this period. These positions are also expected to grow most rapidly from 1980-90, although the rate of increase is expected to be only about 65 percent. Even at this reduced growth rate, about 6,000 additional positions in the computer field are expected to be created in Kansas between 1980-90.

Engineering occupations grew only 31.1 percent in Kansas between 1970-80. More substantial growth in the 50-55 percent range is expected, however, in the '80s. If this pattern materializes, Kansas will have about 6,000 more positions for engineers in 1990 than in 1980.

Demand for skilled technicians in Kansas is also expected to grow rapidly during the '80s. About 10,500 more positions are expected in 1990 compared to 1980. This increase translates into approximately a 55 percent growth rate for the decade, a rate comparable to that experienced in this category between 1970-80.

Somewhat conversely, growth in demand for scientists in high-technology fields is expected to be comparatively slow in Kansas between 1980-90 with only about 25 percent growth (650 new jobs) being expected for the decade—a much slower rate of growth than the 60-65 percent recorded for these occupations during the '70s.

B. EMPLOYMENT PROJECTIONS FOR SELECTED HIGH-TECHNOLOGY INDUSTRIES

Developed within this subsection is a set of projections for overall employment growth for a group of high-technology industries. The industries chosen for this purpose conform closely, but not exactly, to that group of industries inventoried in Table 3. Differences exist because Bureau of Labor Statistics (BLS) industry employment forecasts[7]—which provide the basis for the projections—do not themselves conform completely to the SIC-industrial decomposition. Therefore, it was not possible to provide projections for some of the industries listed in Table 3.

Kansas industry employment projections were developed using a methodology analogous to the approach used in deriving the Kansas occupational projections. Specifically, whenever possible, the national projections were adjusted to reflect differences in past growth trends between the U.S. and Kansas. Unfortunately, for most of the industries ana-

Table 11

Employment in Kansas by High-Technology Occupational Categories with Projections to 1990

	Actual Employment			Projected Employment			
	1970	1980	Percent Change	1990 High-Trend	Percent Change	1990 Low-Trend	Percent Change
Engineers	8,462	11,095	31.1%	17,225	55.3%	16,611	49.7%
Scientists	1,632	2,620	60.5	3,307	26.2	3,260	24.4
Computer personnel	1,720	9,338	442.9	15,673	67.8	15,339	64.3
Other technical occupations	11,425	18,057	58.0	28,309	56.8	27,951	54.8
Total	23,239	41,110	76.9%	64,514	56.9%	63,161	53.6%

lyzed, it was not possible to establish past employment growth trends for Kansas because, in many cases, the industries did not exist on any significant scale in the state prior to 1970.

Table 12 contains total employment projections to 1990 for 18 high-technology industries for which projection data were available. Once again, high-trend and low-trend projections are used. The economic assumptions underlying each are the same as those discussed earlier.

The 1969-79 employment growth rates in the U.S. for these industries indicate their varying states of economic health over the decade. Among the high-tech manufacturing industries, electronic computing equipment grew very rapidly as did drugs and medicines and some types of electrical machinery. In contrast were a number of industries with high-tech elements which lost ground during the '70s. For example, aircraft and parts and ordnance declined, a development attributable to the end of the Vietnam War effort. Less easily explained are the employment retrenchments which occurred in office and accounting equipment; household appliances; and radio, TV, and communications equipment.

As discussed earlier, 1970 growth trends in Kansas cannot be charted for many of these industries. However, for those which could be so tracked, the fastest growers in Kansas were drugs and medicines, agricultural chemicals, and some types of electrical machinery. Although subject to considerable year-to-year volatility, aircraft and parts—Kansas' major high-tech industry—exhibited only moderate long-term growth over this period.

The 1990 projections contained in Table 12 suggest the likelihood of considerable variability in growth rates during the '80s among these industries. Under either the high-trend or low-trend scenarios, 11-year employment growth rates in excess of 50 percent might be expected to occur for Kansas in the office and accounting machines, electronic computing equipment, and aircraft and parts industries.

Total employment growth in the U.S. is expected to increase 19.4 percent from 1979-90 within the low-trend scenario and 21.4 percent under high-trend conditions. On the basis of these benchmark growth rates, Kansas might expect above average employment growth in a number of other industries as well, including ordnance, other nonelectric machinery, and industrial electrical machinery. Conversely, little or no growth is expected in other electrical machinery, engines and turbines, soaps and cosmetics, and agricultural chemicals.

Table 12

Ten-Year Growth Rates in Selected High-Technologies for the United States and Kansas with Projections for Kansas to 1990

							Projected Kansas Employment			
	US Employment (thousands)			Kansas Employment			1990 Low		1990 High	
Industry	1969	1979	% Change	1969	1979	% Change	Trend	% Change	Trend	% Change
Ordnance	175	75	−57.1%	b	750[a]	—%	1,020	36.00%	960	28.0%
Engines & turbines	112	145	29.5	na	375[a]	—	479	2.76	414	10.3
Office & accounting mach.	52	48	−7.7	na	1,750[a]	—	2,807	60.42	2,661	52.0
Electron. computing equip.	224	350	56.3	na	750[a]	—	1,183	57.71	1,189	58.5
Other machinery except electrical	246	309	25.6	2,054	3,170	54.3	4,440	40.05[c]	4,737	49.4
Electrical machinery (industrial)	223	251	12.6	3,665	1,506	−58.9	1,842	22.31	1,890	25.5
Household appliances	187	180	−3.7	na	375[a]	—	400	6.67	396	5.9
Radio, TV, communications equipment	565	472	−16.5	b	4,605	—	5,093	10.59	5,190	12.7
Other electrical mach.	125	180	44.0	970	2,352	142.5	2,274	−3.33	2,300	−2.9
Aircraft and parts	805	632	−21.5	33,097	40,415	22.1	66,733	65.12[c]	67,436	66.8
Scientific instruments	195	218	11.8	b	668	—	772	15.60	907	35.9
Photo equip & supplies	111	134	20.7	b	750[a]	—	806	7.46	851	13.4
Industrial chemicals (organic and inorganic)	296	323	9.1	2,394	2,198	−8.2	2,457	11.79[c]	2,512	14.8
Drugs and medicines	143	194	35.7	174	1,442	728.7	1,695	17.53	1,724	19.9
Soaps and cosmetics	123	140	13.8	1,387	1,750[a]	26.2	1,812	3.57	1,900	8.5
Agricultural chemicals	65	70	7.7	273	947	246.9	988	4.29	961	1.4
Misc. business services	1,691	3,149	85.9	4,045	6,138	52.5	6,370	3.78[c]	6,751	9.9
Engineering and architectural services	1,046	1,720	64.4	1,860	3,089	66.1	3,964	28.33	4,167	34.9

[a] Value is the mean of an employment range.

[b] Data not reported to avoid disclosure of information pertaining to the operation of specific firms.

[c] U.S. growth rate adjusted to reflect special Kansas trends.

na = Information not reported for Kansas, indicating no significant Kansas base of this industry during the time considered.

Sources: Industry employment data calculated from various issues of *County Business Patterns*, U.S. Census Bureau. Projections were adapted from *Economic Projections to 1990*, Bulletin 2121, Bureau of Labor Statistics.

If these high-tech industries follow their projected growth rates, all except aircraft will remain comparatively small employers in Kansas in 1990. In fact, under the high-trend and low-trend scenarios, total employment in the 16 manufacturing industries listed in Table 12, excluding aircraft, are projected to be only 28,592 and 28,085, respectively, by 1990. Either projected figure amounts to an increase in jobs of only about 5,000 compared to what is estimated to have existed for these industries in 1979. Moreover, their projected total employment is only about 42 percent of what is expected in the state's aircraft industry by 1990 under either trend scenario.

Of course, the industries being projected here do not exhaust what is known as high-tech. Regardless, the data do illustrate that the levels of high-tech development anticipated under either scenario will not represent the answer to this state's economic conundrum. Therefore, Kansas must succeed in attracting high-tech expansion at a rate far greater than implied by these projections if the high-tech explosion is to have more than a minor effect on the state's economy.

All of these projections, however, should be interpreted somewhat cautiously. They are dependent upon the accuracy of the overall BLS projections, the continuance of past growth rate differentials between the U.S. and Kansas for certain industries, and, for others, on the similarity of growth rates between the nation and the state. In this sense, the projections might be best interpreted not as estimates of the growth rates Kansas actually will experience by 1990 but, rather, as an indication of the kinds of growth the state may realistically face if its economic development conforms approximately to the national average and to past trends.

IV. Analysis of Future Labor Force Supplies Relative to Assessed Needs

In this section, work presented in the previous chapters is synthesized to assess the adequacy of future labor supplies in Kansas, particularly in high-tech areas, relative to the needs projected. This undertaking is somewhat limited due to lack of enrollment data for specific degree programs, and, as such, attention is necessarily concentrated on broad skill areas and general labor force considerations. Also, as part of the assessment process, a more extensive examination is made of the current status of the state's post-secondary high-tech offerings and of the types of training required for specific high-tech occupations. Finally, suggestions are made for program development, expansion, and upgrading in situations where it appears that, based upon existing programs, Kansas will be unable to provide an adequate in-state supply of workers with certain skills.

From an overall labor force perspective, the Kansas working age population will be moving through a period of very slow growth over the next several years. Barring significant changes in the migration pattern to and from the state, the working age population is only expected to grow 1.3 percent from 1980-87. A significant increase in the growth rate for this population group will probably not occur until the mid-1990s when the large 0-7 years age bracket begins to enter the work force. Even though projections called for more substantial growth in the labor force—about 5.6 percent—over 1980-87 relative to the working age population as a whole, this rate of increase is small by historical standards. Consequently, a sustained period of high economic growth rates may introduce short-term labor shortages in the state, thereby engendering wage increases and undermining the state's attractiveness to enterprise.

A likely response to labor force shortages would be an increased rate of labor force participation within the state as well as inmigration of workers from elsewhere. These facts, however, are not completely reassuring for, if Kansas is only part of a more general economic expansion, it will be difficult for this state to attract workers from other states. Also, the 5.6 percent growth projection already incorporates higher participation rates by women. Thus, it may be that little slack remains in the potential work force, i.e., labor force participation rates may be nearing levels from which further significant increases are not possible.

Based on these considerations, it is not unrealistic to suggest that general labor force shortages may be a significant factor in limiting Kansas' rate of economic expansion over the next several years. At present, however, the labor force contains substantial slack in terms of relatively high numbers of unemployed workers and reduced participation rates within the population. As such, no general labor shortage will occur in the near term, and the concerns expressed should be interpreted within a longer-term perspective.

A. THE HIGH-TECH LABOR FORCE AND THE EXPECTED ADEQUACY OF HIGH-TECH TRAINING PROGRAMS

Under a set of realistic economic assumptions, this study projected growth of about 20,000-22,000 jobs in 33 high-tech related occupations, and most of these occupations require specialized training and/or post-secondary degrees.

A number of Kansas post-secondary institutions have training programs in high-tech related fields. These would include all of the Regents universities as well as many of the independent four-year institutions which offer degrees in the sciences or computer-related fields. Among this group of institutions, KU, KSU, and WSU, which jointly issue 85 percent of all four-year engineering degrees and all graduate degrees in that field, must be considered the dominant high-tech oriented universities. At present, the bulk of programs at the state's two-year colleges and vocational institutions are not geared towards high-technology. Training, though, is available at a number of institutions in data processing, electronics, and word processing. Also, some experimentation has begun with programs in computer-aided drafting, robotics, avionics, micro-processing, and computer repair.

Because of data limitations, evaluation of the extent to which Kansas' post-secondary institutions can meet present and expected needs for high-tech related skills is limited to the four general occupational categories established in Table 11.

Engineers: Engineering represents the occupation with the most high-tech characteristics. In 1980, 11,095 engineers were employed in Kansas with 43 percent of them working in Wichita. For 1980-90, a 5,500-6,130 net addition to jobs in engineering is projected. And over the five-year period from 1983-87, Kansas is projected to graduate about 4,700 students with bachelors degrees in engineering. On the basis of these projections, more engineering graduates will be produced in the state than will be needed by Kansas firms during the '80s. There is no guarantee, however, that shortages will not occur for individual occupations.

Scientists: Only about 600-700 net additions to jobs for scientists are expected to occur in Kansas from 1980-90. The state, though, is expected to produce 4,183 graduates from 1983-87 with bachelors degrees in the sciences. This comparison may not be completely relevant, however, because graduate degrees are often necessary in these occupations. Yet for the 1981-82 academic year, Kansas generated nearly 100 graduates with advanced degrees in the physical sciences and others with advanced life-science degrees. Therefore, even on the basis of just graduate degrees, Kansas would be able to meet and exceed its own needs.

Computer Personnel: To produce an inventory of personnel in the computer field requires involvement of both the universities *and* the community colleges and vocational institutes. Systems analysts and most programmer jobs require at least a bachelors degree, while operators and repair technicians require training in specialized two-year or voc-ed programs. Computer jobs are expected to be the fastest growing during the '80s of those in the high-tech area. This study estimated that between 6,000 and 6,500 net job additions would occur in these fields from 1980-1990. Based on present data, it is not possible to predict how well the Kansas educational system will meet this need. A 1980 study by the state's Vocational Education Administration[8] indicated, however, that even at that time, shortages of computer-related technical skills were occurring across the state.

Other Technical Occupations: A number of technical occupations, such as drafter, electrician, and engineering technician, are critically important to high-tech development. Training for most of these positions is at two-year colleges and technical and vocational institutes. As a group, these positions are expected to grow by nearly 10,000 during the '80s. Kansas' two-year colleges are projected to graduate 1,121 students with two-year technical engineering degrees between 1983-87 and 2,428 degrees in health fields, some of which may have high-tech significance. Also, 8,680 students at Kansas voc-ed institutes are expected to complete programs in trade and industrial education over the same period. A significant but indeterminate number of these completions will be in drafting and electronics; nevertheless, the 1980 vocational education needs assessment study indicated significant educational deficiencies relative to assessed needs in some parts of the state for occupations in drafting, electronics, and engineering technology.

In sum, Kansas will probably be able to satisfy its own needs for high-tech skills requiring four-year or advanced degrees. Less certain, though, is its ability to meet internally needs for rapidly growing computer-related and other technical occupations. In terms of policy, these findings suggest that some redirection in the state's post-secondary educational system may be in order. A recommendation having merit on several fronts would be for some of the community colleges, particularly those in close proximity to the five likely high-tech growth areas in Kansas, to pare back their liberal studies programs and concentrate more heavily on producing terminal degrees in skill areas of projected high demand. Enactment of this recommendation would allow additional resources to flow into high-technology areas without engendering significant cost increases. Because high-tech skills are currently in shortage and face strong projected demand, a long-term effect should be greater enrollment for the two-year colleges which pursue this type of recommendation. Also, emphasis on terminal programming at the two-year colleges would result in better use of the liberal studies resources at four-year universities and, hence, reduce the present rate of cutback in these programs.

Another potential problem is the relative lack of area vocational technical institutes (AVTI) and community colleges (CC) near the areas of Kansas in which high-tech is expected to make its biggest impact. Only one AVTI and one CC lie in the Wichita SMSA. None are in the Lawrence SMSA, and Kaw AVTI is the only representative in the Topeka SMSA. The situation is somewhat better in the Kansas portion of the Kansas City SMSA within which two CCs and one AVTI are located. At the minimum, it would seem necessary to upgrade the high-tech offerings at AVTIs in or nearby the five designated high-tech target sites. If skill shortages are still indicated after this step is taken, new vo-tech facilities may need to be developed.

Another problem plaguing efforts to develop high-tech programs within the AVTI system is the lack of students to participate in these programs. This problem, a function of small populations in the outlying areas, has been aggravated by recent population declines in Kansas in the 17-21 year age bracket. Most people in this group have been making the choice to pursue four-year degrees or to seek employment upon completion of secondary education. This fact re-emphasizes the imperative for offering high-tech programs at AVTIs proximate to the state's larger population centers and, as well, points out the need to offer these programs in the evenings and on weekends to attract those who hold regular jobs.

Overall, it should come as no surprise to most that Kansas can apparently meet with relative ease the likely demands placed upon it during the '80s for high-tech professionals. This conclusion, however, also throws into bold relief the axiom that Kansas' biggest export has been brain power—a rather wry reference to the annual flight of many recent graduates from the state's university system away from Kansas for lack of local employment opportunities.

The fact that Kansas appears able to meet its *immediate* needs for professionals in high-tech fields does not necessarily imply that no program upgrading is needed at this level. On the contrary, a number of factors would tend to mitigate such a conclusion. Primary among these is that this study's projections for high-tech in Kansas were based on growth patterns comparable to those predicted for the entire U.S. They imply solid, but not spectacular growth. If Kansas were to stimulate growth in high-tech substantially above the national average, it would introduce general skill shortages for almost all high-tech occupations.

Another consideration is the "signaling" role that a state's high-tech programs play. Perception of a state's willingness to accommodate high-tech industry is based, at least in part, upon how well high-tech programs are supported in the state's university system. Also, specific enterprises are attracted or repelled by the strengths or weaknesses exhibited by university programs in specific high-tech areas.

A final argument for upgrading high-tech at the university level is that it increases the chances of stimulating "home-grown" enterprises in the high-tech area through the entrepreneurship of faculty and graduates. It is well-known, for example, that this sort of phenomenon has contributed markedly to growth in the Silicon Valley.

V. Summary and Conclusions

Presently, high-tech is not a potent force in Kansas. Specifically, it was calculated that Kansas currently has about 41,000 workers or 3.7 percent of the work force (compared to 4.1 percent nationally) engaged in 33 occupations which embody high-tech characteristics.

The largest concentration of high-tech skills is in the Wichita area, due principally to the aircraft industry, with the Kansas City area containing a less concentrated, but industrially more diverse high-tech element. Interestingly, and potentially significant for policy purposes, is that Lawrence and Manhattan have failed to attract any significant high-tech industries despite their strong, research-oriented universities.

Nor will high-tech be a dominant factor in Kansas by 1990, if this report's projections materialize. Under a normal growth scenario, it was predicted that 53-57 percent more jobs would develop in the 33 high-tech occupations by 1990. Such growth rates would translate into 22,000-23,500 new jobs by the end of the decade in these occupations. The fastest growing high-tech occupations within the state are expected to be in the computer field, engineering, and other technical occupations.

Given the predicted rates of job growth, Kansas post-secondary educational institutions will generate more professional workers with skills in high-tech areas than the state will be able to employ. Thus, the much discussed Kansas "brain drain" can be expected to continue. It is possible, though, that generalized skill shortages for particular technical occupations will become acute as the decade progresses unless appropriate programs are developed within the state's community college and vocational institute network. From a more general labor force perspective, the state will be going through several years of slow labor force growth, thus engendering the prospect that general labor force availability may inhibit the state's economic growth.

However, it should be borne in mind at all times when contemplating the information in this report that the projections both for job growth and labor force growth derive from assumptions which reflect a middle-of-the-road scenario. Thus, they indicate what might happen under normal economic conditions. Even under average conditions, though, *proportional* growth in high-tech jobs will be significant. The reason that the Kansas numbers are not very large on a relative basis is that the high-tech base in Kansas is currently quite small. Even fairly rapid employment growth rates, when applied to a negligible employment base, do not result in very many new jobs.

As an illustration, note that 62,987 new entrants are projected to enter the Kansas work force between 1980-87, in spite of a slow rate of labor force growth. Based upon this study's projections, Kansas cannot expect that more than a minority of these workers will be employed in jobs opened up through the expansion of high-tech in the state. Therefore, perhaps the most obvious and important conclusion generated from this study is that Kansas will have to capture more than its proportionate share of the anticipated growth in high-tech industry if the forthcoming wave of advance technology is to have more than a ripple effect in Kansas.

Footnotes

[1] This article was adapted from a study conducted by the Institute for Economic and Business Research under a contractual agreement with the Kansas Department of Economic Development. The full study was submitted to the Governor's High-Technology Task Force this past summer.

[2] C. W. Minshall, "Development of High-Technology Industries in New York State," Battelle-Columbus Division, April 1982, prepared for the New York State Science and Technology Foundation.

[3] Recent efforts include the Battelle report, *op. cit.;* Linda Thornton, "Is There a High-Tech Firm in Your Future," Midwest Research Institute; and "Towards a Definition and Listing of 'High-Tech' Occupations," a report prepared by the Research Analysis Section of the Kansas Department of Human Resources (KDHR).

[4] KDHR, *op. cit.*

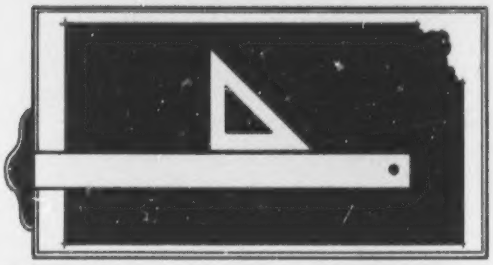
[5] Only the Kansas portion is considered in this section because the relevant data are available only at the county level and not by SMSAs. Therefore, data for Johnson and Wyandotte counties were aggregated to comprise the Kansas portion of the Kansas City SMSA.

[6] Department of Labor, Bureau of Labor Statistics, *Economic Projections to 1990*, Bulletin 2121, March 1982, and *Occupational Projections and Training Data: A Statistical Supplement to the 1982-83 Occupational Outlook Handbook*, Bulletin 2202, December 1982.

[7] Department of Labor, Bureau of Labor Statistics, *Economic Projections to 1990*, Bulletin 2121, March 1982.

[8] Kansas State Department of Education, Vocational Education Administration, "Vocational Education Needs Assessment Study," January 1980.

Factors in Firms' Decisions to Locate or Expand in Kansas



The growth of new establishments in Kansas appears to be market-driven.

Robert A. McLean
Anthony L. Redwood
Morris M. Kleiner

Dr. Robert McLean is an Associate Professor in the University of Kansas School of Business and a Faculty Research Associate with the University's Institute for Economic and Business Research. Dr. Anthony Redwood, Professor in the KU School of Business, is the Director of the Institute for Economic and Business Research. Dr. Morris Kleiner is a School of Business Associate Professor and Director of the Institute's Center for Human Resources. The authors wish to acknowledge the assistance of Institute staff members Matthew Anderson, Daniel Petree, Chris Rott, and Janet Willer as well as the staff of the Kansas Department of Economic Development.

Introduction

Almost all economic analysts agree that the decade of the '80s will be characterized by intense, high-stakes competition among states to attract and develop industrial growth. In essence, the stakes are a state's continued or renewed economic health *or* economic stasis or regression. For Kansans—whose state is undergoing a dramatic evolution in its economic structure—the loss might be very dear if the effort is unsuccessful: the agricultural sector's proportionate contribution to the state's total economy is declining, and the offsetting increase must come from a vital industrial sector. Given this developing scenario, a state's competitive position will be improved if it can determine—and then act upon—information identifying those factors that expanding and newly-locating firms consider significant when making their location decisions.

Thus, to estimate the degree to which 1) the characteristics of Kansas' labor force and market and 2) the state's general economic and business environment enhance or inhibit industrial growth, the Institute for Economic and Business Research (IEBR) conducted surveys of firms either newly in place or that recently expanded (as identified in the Kansas Department of Economic Development files on industrial growth).[1]

The surveys were developed within a general framework of industrial location theory that explains location decisions as an expression of a firm's desire to maximize the present value of its profits. This theory argues that, in an age of national markets, most manufacturing activity is not tied to any *unique* location by cost-minimizing considerations. This is not to say, however, that minimizing costs is not the principal consideration in a location decision but, rather, that where costs are roughly the same a firm will select the location offering the greatest noncost advantages and amenities.[2]

Therefore, characteristics of a specific labor market can affect both producer costs and the amenities associated with any potential industrial location. For example, locally prevailing wage levels, the availability within the local labor force of required skills, and prevailing attitudes toward the employment relationship will all affect the costs of recruiting and employing labor. In brief, both objective labor market factors (wage levels and skill supplies) and subjective factors (attitudes toward work and attitudes toward unionism) vary across locations and have varying effects on firms' decisions to locate.

As well, since labor market characteristics are only one factor in firms' location decisions, the surveys gathered information on a wider basis. Thus, questions were included concerning public policy variables (tax rates and regulations), general economic conditions (transportation, utilities, and business climate), and amenities (climate, opportunities for continued education and training, and personal opinions about life in Kansas).

Thus, the surveys provide information on the factors which firms report to have influenced their decisions to locate new or expanded manufacturing facilities in Kansas and the effect of various labor market characteristics in such decisions.

Using the results of the surveys, this research sought to answer the following questions:

- Has manufacturing development depended largely on an expansion of existing enterprises or on the attraction of new ventures?
- Has the manufacturing development of Kansas been labor or capital intensive?
- Has manufacturing development been stimulated or retarded by labor market trends and developments?
- Have specific labor force and market considerations been either less or more important than other considerations in influencing the location or expansion decision?

I. Survey Methods and Limitations

A. CHOICE OF SURVEY METHOD

The determinants of industrial location may be studied by various methods. One research strategy is to identify those factors expected to either attract or repel industry, measure them across possible locations or over time, and then regress some measure of industrial growth against a vector of those variables to determine the independent effect of each. Chang (1979), for example, used both geographic and time-series variations in a vector of independent variables to explain interregional growth differences in the cotton textile industry.[3]

Two considerations made a method such as Chang's infeasible at this stage in the research. First, many of the location-relevant variables (opportunities for education and training, for example) differ across Kansas counties. It is not appropriate, therefore, to use a state-average measure in an interstate comparison when adequate data for an intrastate, intercounty comparison do not exist.

Second, even if state averages were to be used, the measure of industrial growth at the state level so obtained would not capture the effects sought by this research. For example, because any growth rate is affected by the size of the base on which it is computed, minor activity in an area where earlier activity had been on a very small scale would generate a very large growth rate. Examining changes in the numbers of establishments would avoid that problem, but such data were available only on a statewide base.

Given these problems, the survey method was adopted to find out from the new and expanding firms 1) what the factors were that attracted them to their present locations and 2) which of a number of listed factors were regarded as favorable, unfavorable, or irrelevant to their decisions to locate or expand in Kansas.

B. QUESTIONNAIRES

In the questionnaires proper, firms were asked to rate each of a number of possible factors on a five-point scale ranging from "Extremely Negative" to "Extremely Positive." Scores above "3" indicated that the factor was rated as positive (that is, favorable to location or expansion in Kansas); the response "3" indicated that the factor was not relevant to the firm's location decision.

C. SAMPLES AND RESPONSE RATES

All new firms listed in the Kansas Department of Economic Development records were included in the survey as were all Kansas firms known to the Department to have expanded their facilities in the period (1977 through mid-1982). There were 571 new establishments, and questionnaires were delivered to 454 (the remainder being undeliverable). Responses were received from 175, a response rate of 38.55 percent. Questionnaires were delivered to 240 of the 264 firms known to have expanded (the remainder being undeliverable). Of these, 81 firms returned completed questionnaires, a response rate of 33.75 percent. These response rates are quite high for a mailed survey. Table 1 gives the distribution of responding firms by industry and shows that the sample included firms from practically all types of manufacturing.

D. SOURCES OF POSSIBLE BIAS IN RESULTS

Three sources of bias inherent in the survey method must be noted. First, the firms surveyed were those finding one or more Kansas locations to be optimal. Thus, these are the firms for which Kansas locations offered, on balance, positive locational advantages. Other firms that did not locate in Kansas found aspects of Kansas locations to be, on balance, negative. The responses to the advantages and disadvantages of Kansas as an industrial location, therefore, will be biased upwards (exaggerated in a positive direction) by a naive examination of these survey results.

Second, some survey respondents may have made the quite natural error of answering the questions in some manner that they believed IEBR wished them to be answered. To minimize this possibility, a pre-test of the survey instruments was conducted, but such a response bias is unavoidable.

A third source of bias in the evaluation of such surveys is the tendency to report that factors which were actually negative merely did not enter into the location decision. This, like the first source error, represents sample selection bias.[4]

Table 1
Distribution of Respondents by Industry

Industry Classification (2 digit)	New Establishments No.	Expanded Establishments No.
Food and kindred products	11	7
Apparel and other finished goods made from fabrics	5	0
Lumber and wood products except furniture	6	2
Furniture and fixtures	5	1
Paper and allied products	3	2
Printing and publishing	25	2
Chemicals and allied products	4	6
Petroleum and coal products	3	0
Rubber and plastic products	9	10
Leather and leather products	2	1
Stone, clay and glass products	7	2
Primary metal industries	2	1
Fabricated metal products	24	9
Machinery, except electrical	37	22
Electrical equipment and supplies	8	5
Transportation equipment	9	8
Instruments and related products	4	0
Miscellaneous manufacturing	4	1
Tobacco products	0	0
Textile mill products	0	1
Other	7	1
Total	175	81

II. Results of the Surveys: State Characteristics

A. RELATIVE IMPORTANCE OF NEW ESTABLISHMENTS AND EXPANSION OF EXISTING ESTABLISHMENTS

A simple count of new and expanded establishments clearly shows that new establishments accounted for almost twice as many start-ups as did expansions during the period in question. Expansions, however, averaged $6,130,908 in investment, compared to new establishments' average investment of $2,181,464. Thus, though fewer in number, expansions represented greater total investment than did new establishments. No information is available on the relative contribution of new and expanding firms to employment.

B. CAPITAL INTENSITY OF MANUFACTURING DEVELOPMENT

The survey results allow for only broad generalizations about the capital intensity of Kansas manufacturing development. As well, due to data limitations, only new establishments in Kansas can be discussed in this general manner.

As capital intensity is meaningful only in relative terms, the average capital/labor ratio in manufacturing in the United States can be employed as the comparison value. For 1980 (the midpoint of the investment period, 1977-1982), that average for the United States was $51,638.91 per worker.[5]

The expectation is that the capital/labor ratio for manufacturing in Kansas would be slightly below the national average because the national average is biased upward by inclusion of nonproductive (office and headquarters) capital. The new establishment respondents' average was $58,324.80 per worker. Thus, *new* Kansas manufacturing establishments are somewhat more capital intensive than the average of *all* manufacturing establishments in the U.S.

It is important to note, however, the presence of a "vintage" effect in the estimates above. Over time, the cost of manufacturing tends to become more capital intensive (through capital deepening). The U.S. average is held down, therefore, by the presence of older facilities, while the figure for Kansas includes new establishments only. The data limitations prohibit comparing new Kansas establishments to the average for new establishments nationwide.

C. FACTORS INFLUENTIAL IN DECISIONS OF NEW FIRMS TO LOCATE IN KANSAS

Table 2 shows the response of all *new firms* concerning the effects of a large number of factors on their decisions to locate in Kansas. The table lists those factors and lists two statistics summarizing the response. The response of "3" indicates that the factor was not relevant in the firm's location decision. Thus, if the mean response to a factor is significantly greater than "3," the mean respondent found that factor to be a positive attribute of the state. The mean response to each of the factors is listed in the first of the statistical columns. All the factors were ranked as generally positive by the mean respondent.

These mean rankings, however, mask a great deal of variation in importance among the factors. Indeed, as discussed above, the very fact that the respondents were those firms that chose to come to Kansas implies that, for these firms, no factor was likely to be regarded, on average, as negative. Rather, these firms' rankings are likely to suggest that a factor that did not suit them simply did not enter into their location decisions.

To separate the *most* from the *least* favorable locational factors, the second statistical column in Table 2, providing the percentage of respondents to a given factor, indicates that the given factor was either somewhat positive or extremely positive in the location decision (rather than being extremely negative, somewhat negative, or not a factor). In this column, rather great variation among the factors can be seen. The factor most often cited as being positive in the location decision is the state's proximity to markets. Also worthy of note is that the location of the state was cited by 66.4 percent of all respondents. Thus, to make the first generalization about manufacturing growth, the growth of new establishments in Kansas appears to be market-driven (based on proximity to markets). Access to suppliers is of somewhat less concern.

Personal opinions about location in Kansas also appear to be a primary consideration among the firms responding. It is not clear what, if any, policy implications can be derived from this finding, although it may underscore the importance of home-grown enterprises in the state's economic development.

Labor force and labor market variables follow market proximity and personal opinion factors in importance in location decisions. Workers' compensation and unemployment insurance laws receive relatively low marks from new establishments, perhaps suggesting some need for review of their features relative to those of other states. The Kansas right-to-work law, however, was cited by new firms as a principal attractive feature of the state. This result is somewhat surprising, given the skepticism that earlier research has indicated as to the role of right-to-work legislation in location decisions.[6,7] In the Kansas case, however, the right-to-work law appears to be a major factor for those firms locating in the state. Still, at this point, the research cannot say that Kansas attracts more establishments due to the right-to-work law than it would without it. The case may be that the state is attracting that subset of firms which finds right-to-work laws attractive.

Table 2
New Firms' Ratings[a] of Factors in Decision to Locate in Kansas (N = 175)

Factor	Mean	% of Respondents Finding Positive
Personal opinions about Kansas	3.802	62.9%
The geographic location of the state	3.845	66.4
Kansas' climate	3.142	23.5
Presence of suppliers in or nearby Kansas	3.389	47.5
Presence of markets in or nearby Kansas for your products	3.809	69.1
Overall transportation conditions (such as rates, reliability of carriers, schedules)	3.441	48.4
The cost and availability of energy in Kansas	3.186	31.1
The cost and availability of water in Kansas	3.205	23.0
State tax levels affecting business	3.097	22.1
State business climate	3.471	43.3
The nature of operational regulations in Kansas (such as pollution control, utility regulation)	3.106	16.1
The nature of workmen's compensation and unemployment insurance laws in Kansas	3.094	22.5
General characteristics of the state labor force (such as turnover rates, absenteeism, attitudes towards work)	3.516	55.3
Availability of workers with appropriate skills	3.395	49.4
Kansas "right-to-work" laws	3.790	52.5

[a] Firms were asked to indicate the extent to which each factor was positive or negative in its decision to locate in Kansas, on a scale ranging from 1) extremely negative to 5) extremely positive. The response "3" indicated that the factor did not play a role in the location decision.

Table 3 provides additional insight into the motivations for the location of new firms in Kansas. This table presents the results of the responses to the request that firms choose, from among a given list of factors in summary categories *not* identical to those shown in Table 2, the three most important factors in the decision to locate in Kansas. While respondents were asked to rank order these "top three" factors, the table presents the percentage of all respondents ranking each factor *among* the top three, without regard to the precise "1,2, or 3" ranking.

As in Table 2, the leading factor in these location decisions is the geographic location of the state. Further support, then, is provided for the hypothesis that manufacturing development in Kansas is market-driven. A close second for top factor is personal opinions about Kansas, reflecting, it can be inferred, the importance of home-grown industry in the state's industrialization.

Labor force and labor market factors follow as leading factors in firms' location decisions. Again, the right-to-work law was cited as a major factor in location decisions. Both in Table 2 and Table 3, the availability of the labor force ranked highly, but skill levels and other characteristics (attitudes toward work, turnover rates, and absenteeism) are viewed as less important. Some reluctance, however, may be evident among respondents to emphasize more than one labor force characteristic, so the relative importance of the three labor force factors is problematic. (The effect of wage levels is discussed under community characteristics, below.)

Two additional generalizations emerge from these data. First, with the exception of the state's right-to-work law, the legal/regulatory environment of the state has had little effect on the recent decisions to locate new manufacturing firms in the state. Second, while the availability of labor for manufacturing employment was viewed by new firms as a locational advantage for Kansas, the skill levels of the Kansas labor force were not so positive a factor. The weak attractiveness of available labor force skill is consistent with results reported in other Institute studies.[8]

D. FACTORS INFLUENTIAL IN FIRMS' DECISIONS TO EXPAND IN KANSAS

Tables 4 and 5 (in the same form as Tables 2 and 3, respectively) give the results of the survey of firms expanding in Kansas.

These results show that, in general, the responses follow those of the new firms. Location, the right-to-work law, and the general characteristics of the labor force were ranked as being particularly important in the decision to expand in Kansas rather than to build new facilities elsewhere. For expanded firms, the skill level and other characteristics of the labor force received a higher ranking than for new firms, perhaps because the expanding firms had already made an investment in the specific human capital of their work forces. The right-to-work law was given greater emphasis than among the new firms.

It can be seen that Table 4 includes two factors additional to those listed in Table 2 ("cost of reproducing the expansion at a new location" and "difficulty of hiring and training employees elsewhere"). The first of these was considered to be of substantial importance, the second less so.

Table 5 also included the additional factor of "cost of moving facilities," and this factor was given considerable emphasis by the expanding firms.

E. INDUSTRY DIFFERENCES

As indicated by Table 1, respondents to both surveys were distributed over a wide variety of industries. In most industry classifications, the numbers of respondents were so small as to render meaningful comparisons impossible. Table 6 reports those interindustry differences which were statistically significant at the 10 percent level (that is, they were so large that there is only a 10 percent probability that they would arise by chance). Table 6 is derived from a comparison of the percentages of respondents in the industries with 10 or more respondent firms who ranked a factor as being among the three most important in their decisions to locate or expand in Kansas. No statistically significant differences were found between industries in the sample of expanding firms, but, as shown in the table, several were found among the new firms.

These results, by demonstrating that certain interindustry differences exist, confirm the commonsense expectation that the relative importance of various factors in the location decision differs substantially in different industries. It is extremely likely that more differences exist than were demonstrated by

Table 3

Factors Ranked Among the Three Most Important in New Firms' Decisions to Locate in Kansas

(N = 175)

Factor	% of Respondents Ranking Factor
Personal opinion of Kansas	40.6%
Transportation conditions	18.9
Right-to-work law	29.7
Labor force, availability	28.6
Labor force, skills	15.4
Labor force, other characteristics	14.9
State tax levels	2.9
State's location	57.7
Specific tax and other benefits	5.7
Business climate	17.7
State utility costs	8.6

Table 4

Expanded Firms' Ratings[a] of Factors in Decision to Expand in Kansas

(N = 78)

Factor	Mean	% of Respondents Finding Positive
Personal opinions about Kansas	3.581	52.7%
The geographic location of the state	3.947	71.1
Kansas' climate	3.184	23.7
Presence of suppliers in or nearby Kansas	3.421	43.4
Presence of markets in or nearby Kansas for your products	3.579	51.3
Overall transportation conditions (such as rates, reliability of carriers, schedules)	3.533	56.0
The cost of reproducing the expansion at a new location	3.473	51.4
The cost and availability of energy in Kansas	3.427	42.7
The cost and availability of water in Kansas	3.329	28.9
State tax levels affecting business	2.945	20.5
State business climate	3.297	37.8
The nature of operational regulations in Kansas (such as pollution control, utility regulation)	3.132	23.7
The nature of workmen's compensation and unemployment insurance laws in Kansas	3.027	28.0
General characteristics of the state labor force (such as turnover rates, absenteeism, attitudes towards work)	3.773	70.7
Availability of workers with appropriate skills	3.480	57.3
Kansas "right-to-work" laws	4.200	74.7
Difficulty of hiring and training employees elsewhere	3.133	25.3

[a] Firms were asked to indicate, on a 5-point scale, the extent to which each factor was a positive or negative consideration in their decision to expand in Kansas rather than to build another facility in some other location. The scale ranged from 1 (extremely negative) to 5 (extremely positive). The response "3" indicated that the factor did not play a role in the location decision.

Table 5
Factors Ranked Among the Three Most Important in Expanded Firms' Decisions to Expand in Kansas
(N = 78)

Factor	% of Respondents Ranking Factor
Personal opinion of Kansas	17.3%
Transportation conditions	11.1
Right-to-work law	45.7
Labor force, availability	23.5
Labor force, skills	11.1
Labor force, other characteristics	29.6
State tax levels	0.0
State's location	40.7
Specific tax and other benefits	12.3
Business climate	9.9
State utility costs	7.4
Cost of moving facilities	44.4

Table 6
Illustrative Industry Differences[a] in Most Important Factors[b] in Decisions to Locate in Kansas
(New Firms)

Factor	Industries Which Differ in % Respondents Ranking
Transport	Food (54.5%) vs. Printing (4.0%), Fabricated Metals (16.7%), Machinery (non-electrical) (16.2%)
Right-to-work law	Fabricated Metals (50.0%) vs. Printing (19.0%)
Labor force, availability	Fabricated Metals (37.5%) vs. Printing (12.0%)
Location of state	Fabricated Metals (70.8%) vs. Printing (40.0%)

[a] The table shows only those differences which were statistically significant at the .10 level or less; that is, differences so large that there are only ten chances in a hundred that they arise from sampling error. There were no industry differences that were statistically significant among the expanding firms. It is possible (and very likely) that other industry differences exist among both new and expanding firms, but the smallness of the samples makes it impossible to establish that they are not due to sampling error.

[b] The table compares the percentages of respondents in different industries who ranked a factor as among the three most important factors in their decisions to locate in Kansas.

this research and that they apply to decisions to expand as well as to locate, but the limitations of the samples prevent this likelihood from being established by the present research.

III. Results of the Surveys: A Comment on Community Characteristics

This article focuses primarily on those features of Kansas that manufacturing firms find attractive and repellent. Firms, however, look not only to states but to *sites* in making their location decisions. Thus, some discussion of local characteristics is warranted in any discussion of location-relevant variables.

Table 7 reports the percentage of responding new firms which ranked each community characteristic as among the three most important in their location choice. Ranked most often were the same factors that were most often mentioned for the state as a whole: location (in relation to markets and suppliers) and personal opinions about the community (which, again, may be a reflection of the numerical importance of "home-grown" establishments).

The factors next ranked most frequently were local business climate and two labor market variables: availability of the work force and wage levels. Other factors, including educational opportunities and community amenities, ranked much less frequently. For example, only 2.3 percent of these respondents ranked opportunities for training and education (even though pre-tests of the questionnaires suggested that educational opportunities were important, especially for large establishments).

A note of caution concerning the interpretation of these results should be reiterated. These survey results represent firms that chose to locate in Kansas communities. One interpretation of the low percentage of firms ranking community amenities, for example, is that such amenities are simply unimportant. An equally plausible interpretation, given the population surveyed, is that such amenities are, generally, important but that Kansas communities offer few of them. The firms that locate in Kansas, then, are those that find such amenities unimportant.

IV. Conclusions

While the results of the survey reported here are tentative, several generalizations seem justified. First, manufacturing growth in Kansas, at least in the manufacturing sector, is driven by proximity to markets; therefore, the state's central location appears largely responsible for its attraction of manufacturing establishments.

Second, manufacturing development in Kansas has been a little more capital intensive than in the United States as a whole.

Third, investment by existing firms has been more important in manufacturing development in the state than investment by new firms.

Fourth, labor market factors have generally enhanced the economic development of Kansas. The presence of a right-to-work law was cited as an important factor by both those firms that located and expanded in Kansas. Also, the availability of labor was frequently

Table 7
Community Characteristics Ranked Among the Three Most Important in New Firms' Decisions to Locate in Kansas
(N = 175)

Characteristic	% of Respondents Ranking Characteristics
Personal opinions about the community	41.7%
Community amenities	5.7
Community public facilities	4.0
Location in relation to suppliers and markets	50.9
Local wage levels	23.4
Local labor force, availability	30.9
Local labor force, skills	14.3
Local labor force, other characteristics	13.7
Specific tax and other benefits	10.9
Opportunities for training and education	2.3
Local business climate	33.1

cited as a positive feature of location in the state. However, the possession of skills by Kansas workers was not so often cited, and, although local wage levels received some favorable notice as important in location decisions, that support was not overwhelming.

Fifth, tax levels and local amenities and facilities were viewed as not very important by those responding to the survey.

Finally, despite the limits of the samples, the research demonstrated that the relative importance of various factors in the decision of new firms to locate in Kansas differs in different industries. It seems likely that such differences are more extensive than could be established by this research and that they apply to firms' decisions to expand in Kansas as well as to decisions to locate there.

Policy considerations arising from these findings seem quite apparent and have, in fact, received attention in the state for some time. Clearly, the state should continue its efforts to exploit those advantages emphasized in the surveys as they represent a base from which Kansas can appeal effectively to industrial developers. Kansas' central location and the attractiveness of its labor force are the key characteristics, and policies that would both accentuate and build upon those features have the greatest chance of successfully attracting new industry and inspiring further in-state expansions. Unquestionably, Kansas' potential for industrial growth is circumscribed by certain demographic and economic "facts of life," but, just as certainly, the state's economic future is dependent, in great part, on its perception by industry. Therefore, a strong package of policies addressing needed manpower training programs and other business climate-related factors *combined* with a vigorous public relations effort should ensure that Kansas can compete intently with other states in capturing and developing industrial growth.

Footnotes

[1] This article was adapted from *Monograph #7* of the Institute's Kansas Labor Market Information Project. This research program was funded by the State of Kansas through the Governor's Special Grant Component of the Comprehensive Employment and Training Act and was sponsored by the State Employment Training Council and the Kansas Department of Human Resources. All views expressed are solely those of the authors.

[2] For an extended introduction to industrial location theory, see Hoover, Edgar M. *An Introduction to Regional Economics.* New York: Alfred A. Knopf, 1971, chs. 3 and 4.

[3] Chang, Hui S. "A Study of Industry Location from Pooled Time-Series and Cross-Section Data: The Case of Cotton Textile Mills." *Quarterly Review of Economics and Business*, vol. 19, no. 3 (Autumn 1979): pp. 75-88.

[4] For a discussion of survey research, see Campbell, Donald T. and Julian C. Stanley. *Experimental and Quasi-Experimental Designs for Research.* Chicago: Rand McNally, 1963, pp. 5-6.

5 U.S. Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States, 1981.* Washington, D.C.: U.S. Government Printing Office, 1981, pp. 390, 545.

[6] Aebi, Timothy and Robert A. McLean. "Right-to-Work Laws and Industrial Expansion." *Indiana Business Review* (September and October 1978): pp. 7-10.

[7] Soffer, Benson and Michael Korenich. "Right-to-Work Laws as a Locational Factor: The Industrialization Experience of Agricultural States." *Journal of Regional Science*, vol. 3, no. 2 (Winter 1961): pp. 41-56.

[8] See, for example, Redwood, Anthony *et al. The Kansas Labor Market: Trends, Problems, and Issues.* Lawrence, Kansas: The University of Kansas, The Institute for Economic and Business Research, November 1981.

Research Notes

Fiscal-Restraint Legislation: The Kansas Experience

The escalation in tax burdens in recent years has prompted residents of many states to consider taking actions to limit state and local tax liabilities. The best known of these enactments has been California's Proposition 13, enacted by voter initiative in 1978. Actually, though, Kansas with its "tax-lid law" passed in 1970 was the pioneer state in fiscal-restraint legislation.

The purpose of this note is to evaluate to what extent the Kansas legislation has succeeded in limiting local governmental expenditures. The analysis is based upon a recent Rand Corporation report (Menchik, M.D., Judith Fernandez, and Michael Caggiano, *How Fiscal Restraint Affects Spending and Services in Cities,* Santa Monica, California, The Rand Corporation, 1982.) which studied the impacts of tax-limit legislation for Kansas as well as New Jersey and California.

The Rand study methodology involved a detailed analysis of expenditures for selected municipalities within the study areas. The Kansas communities chosen for study were Wichita and Kansas City.

The initial Kansas tax-lid legislation imposed a temporary, three-year aggregate limit on all property tax levies and also imposed a five-percent cap on annual expenditure growth. The property tax lid was indefinitely extended in 1973, but the expenditure limit was eliminated. In 1977, the state's attorney general ruled that any city or county could exempt itself from the legislation by passing a charter ordinance with a two-thirds vote of its legislative body. Since that time, a number of small cities and some counties, mostly rural, have exempted themselves from the legislation. Notably, Kansas City and Wichita and their host counties have not taken action to exempt themselves.

A number of municipal expenditures, e.g., special assessments, public employee retirement systems, and ambulance services, are exempt from the legislation, and, in addition, jurisdictions may temporarily override the legislation through voter approval of tax-lid referenda which authorize additional levies for special purposes while leaving the rest of the lid intact.

For those cities and counties which have not exempted themselves, the current Kansas tax lid mandates "that aggregate tax may not exceed the amount levied during the base years [either 1969 or 1970] unless it is justified by increases in the valuations of new improvements on real estate or in valuations of personal property."

Prior to addressing the impact of tax-lid legislation on governmental expenditures in Kansas, it is important to recognize that the Kansas law operates only on property taxes and, with the spending ceiling having been rescinded, has a direct impact on expenditures only to the extent that counties and municipalities must balance their budgets—a requirement that ties expenditures to *total* tax revenues, not just the revenues from a single source. Based upon most recent statistics, property taxes account for about 45 percent of total revenues for both Wichita and Kansas City. Therefore, over half of the revenues for these communities emanate from other sources, including state and federal aid and other local taxes as detailed in Table 1 for 1976-1977 (the most recent census data presently available). Consequently, expenditures may well rise in spite of property tax limits if revenue from other sources continues to grow.

Despite difficulties in obtaining accurate records of total annual expenditures made by the two Kansas municipalities, the Rand researchers were able to pinpoint a decline in per-capita expenditures in both cities for the five-year period immediately following the enactment of the tax-lid legislation. This period of fiscal austerity contrasted sharply with the rather rapidly rising rate of per-capita expenditures which had characterized the period immediately prior to the legislation.

Table 2 details the trend in annual per-capita expenditures for both cities for the period immediately preceding and subsequent to the legislation. Although there has been a certain amount of volatility in the annual per-capita expenditure series for both cities, particularly for Kansas City, it is noteworthy that, for the most recent years examined, the tendency in each case was for per capita expenditures to once again be on the increase. Overall, the Rand researchers noted that the average annual expenditure rate for 1965-70 was somewhat higher than the average rate for 1970-79 for each city. Yet the difference was not statistically significant, a fact which forces the conclusion that over time there is no solid evidence to suggest that the Kansas tax lid has slowed the growth rate of local government spending for the state's two largest cities.

This finding is not altered markedly upon examining the state as a whole. For example, in 1965, Kansas was at the U.S. average for state and local government spending relative to personal income—both about 15 percent. For the period 1970-74, Kansas dropped sharply below the average—18.5 percent to 15 percent. In the subsequent years, however, the gap has narrowed to the point where in 1980 Kansas had again approached the national average. Although it cannot be easily docu-

Table 1

Revenue Sources for Kansas, Kansas City, and Wichita: 1976-77 (thousands of dollars)

Source	Kansas	Kansas City[a]	Wichita
Total	2,777,914	60,028	84,717
Fed. govt.	547,745	18,173	21,538
State govt.	———	3,900	5,806
Own Sources	2,230,169	33,552	55,083
Prop. taxes	693,058	20,648	25,471
Sales & gross Receipts taxes	547,749	———	———
Income taxes	331,883	———	———
Charges & Miscellaneous	541,209	11,463	24,105

[a] Kansas City receives intergovernment revenue from Wyandotte County in the form of 80 percent of revenues collected from the county's sales tax.

Source: Bureau of the Census, *1977 Census of Governments*, Volume 4, Numbers 4 and 5.

Table 2
Municipal Government Expenditures in Kansas City and Wichita: 1965-1979

Year	Kansas City Per-Capita Expenditure All Services (in 1978 dollars)	Wichita Per-Capita Expenditure All Services (in 1978 dollars)
1965	209.4	166.6
1966	194.6	na
1969	234.5	177.3
1970	308.8	191.9
1971	na	194.7
1972	308.8	192.8
1973	299.7	190.2
1974	na	181.3
1975	269.9	193.1
1976	273.0	203.2
1977	261.0	215.0
1978	274.4	228.4
1979	324.5	221.5

na = not available

Source: The Rand Corporation

mented, a plausible conjecture is that the weakening over time of the tax-lid law may bear major responsibility for the upturn of state and local expenditures relative to personal income beginning in 1975.

The Kansas experience can be contrasted with that in New Jersey and California, although few definite conclusions can be drawn given the relatively short time period since the enactment of their tax-containment legislation in 1976 and 1978, respectively. In New Jersey, where the tax cap placed a five percent limit on annual increases in municipal appropriations, no discernible impact was made upon per-capita expenditure trends during the three years immediately following the enactment. California's stringent Proposition 13, though, did sharply reduce expenditures over the first two years following enactment for the four municipalities examined.

Another hypothesis examined by the Rand researchers concerned whether municipalities would tend to focus resources more toward "essential" services during periods of expenditure cutbacks. To test this proposition, they compared the portion of the total budget devoted to police protection (an essential service) versus libraries and parks and recreation (judged unessential services) for the periods both before and after enactment of fiscal-restraint legislation. The evidence for Kansas City and Wichita was somewhat supportive of the hypothesis that a greater percentage of resources would be devoted to essential services (i.e., the police force) during periods of fiscal hardship, yet the data were not so persuasive as to rule out the possibility that higher police force shares in the post tax-lid period were merely reflecting a secular trend towards devoting more resources to police protection. Studies at other sites failed to either confirm or deny the hypothesis as well.

To summarize, the evidence documented by the Rand researchers illustrates that tax-containment legislation can slow down growth in local government spending but that, in general, the multitude of revenue sources available to local governments diminish the opportunity for a property tax ceiling to exercise a significant effect on the rate of spending. The Kansas experience, in particular, appears to bear out this conclusion.

Richard Sexton
Research Economist
The Institute for Economic
and Business Research

Census Data Profiles Kansas Youth

Data from the decennial 1980 *Census* provide an interesting and informative glimpse into the demographic, educational, and labor force characteristics of the state. This note uses data obtained from the recently released *Census of Population* (U.S. Department of Commerce, Bureau of the Census) as well as data from previous censuses to focus upon the status of teen (ages 14-17) and adult (ages 18-24) youth in Kansas. Specifically, this research addresses the demographic characteristics of the youth groups compared to other groups in the Kansas and U.S. populations and the educational and labor force conditions of young Kansans in 1980 compared to those conditions as revealed in the 1970 and 1960 censuses.

Although census comparisons are very useful in identifying trends and other comparative characteristics of the population, certain reservations about the method should be noted. For example, comparability can be—and often is—affected by a number of conditions such as changes in classification systems, changes in the "universe" via definitional changes, categorical changes, and changes in statistical techniques. In general, therefore, the reader should be cautious in drawing bold inferences from the data presented herein. In many instances, changes or trends are the product of a number of confounding variables and, as such, can be explained only by application of more rigorous statistical techniques.

Demographics

An examination of Kansas population data reveals little that is exceptional when compared to trends in the U.S. as a whole. Nonetheless, certain characteristics of the Kansas population are notable and worth mentioning:

- Kansas—as is the United States—is growing older.
- Kansas' population growth rate has been considerably lower than that of the U.S. since 1960.

That Kansans are aging comes as no great surprise. This trend is generally explained by the same "baby-boom" theory that was widely used to explain the decrease in median age in the 1970 *Census*. This baby-boom generation has now grown up and is the driving factor in increasing the 1980 median age to 30.0 years for the U.S. and 30.1 years for Kansas (see Table 1).

Table 1
Median Age for U.S. and Kansas by Census Year

Year	U.S.	Kansas
1980	30.0	30.1
1970	28.1	28.7
1960	29.5	29.9

Clearly, the Kansas population is only marginally older than the U.S. population as a whole; however, evidence exists that Kansas may be growing older at a rate faster than that of the U.S. The composition of the population by chosen age groups is presented in tabular form in Table 2.

Table 2
Population Composition by Age Group and Census Year

Year	% Under 14		% 14-15		% 16-19		% 20-24		% Over 24	
	U.S.	KS	U.S.	KS	U.S.	KS	U.S.	KS	U.S.	KS
1980	20.8	20.7	3.5	3.2	7.6	7.5	9.4	9.9	58.7	58.7
1970	26.3	25.5	4.0	4.0	7.4	7.6	8.1	8.4	54.2	54.5
1960	29.6	29.4	3.1	3.0	5.8	5.7	6.0	6.1	55.5	55.8

A comparison of urban and rural populations in Kansas reveals that the rural component has a proportionately greater share of those under age 17 (those 17 and under make up 28.8 percent of rural Kansas compared to 26.7 percent of urban Kansas) and those over age 24 (60.2 percent versus 58.0 percent). Conversely, urban Kansas has a greater share of adult youth (ages 18-24). The adult youth group represents 15.3 percent of the urban population but only 11.0 percent of the rural population. This urban-rural composition is representative for the U.S. population as a whole in roughly the same proportions.

Population growth in Kansas—as previously mentioned—has been relatively less than that of the U.S. taken as a whole, as seen in Table 3.

Table 3
U.S. and Kansas Population by Census Year

	1960		1970		1980	
	Population	% to 1960	Population	% to 1960	Population	% to 1960
U.S.	179,323,175	100.0	203,302,031	113.4	226,545,805	126.3
Kansas	2,178,611	100.0	2,249,071	103.2	2,363,679	108.5

Kansas grew in population 8.5 percent from 1960 to 1980, a period in which the total U.S. population increased 26.3 percent. Of particular note is the fact that the Kansas rural population has decreased 7.3 percent since 1960 (although the rural population has recovered over 3.0 percent since 1970). Slow population growth in Kansas is not, however, the solitary domain of the rural sector. Urban population growth in Kansas has also been less than that of its nationwide counterpart. Kansas urban population grew 18.6 percent since 1960 compared to a 33.4 percent increase for the U.S. urban population.

Of no surprise is that Kansas has a larger proportional rural population than does most of the U.S. In 1980, rural Kansas accounted for 33.3 percent of the total Kansas population compared to the 26.3 percent rural content of the United States. A significant trend toward a reduction in the rural proportion of Kansas (as well as that of the U.S.) has been observed since the 1960 *Census* (see Table 4).

Table 4
Rural Population as a % of Total Population for Kansas and U.S. by Census Year

	1960	1970	1980
U.S.	30.2	26.6	26.3
Kansas	39.1	33.9	33.3

Although both Kansas and the U.S. have shown reduced rural population growth rates since 1960, the rural portion of the population in 1980 was only marginally less than that of 1970. The rural portion of the population, therefore, seems to have stabilized at least to some degree.

Age group growth trends for Kansas and the U.S. have exhibited little variety since the 1960 *Census*. A comparison of state and national patterns shows that Kansas population growth rates in all age groups are less than those for the corresponding age groups in the national population. A number of trends are apparent:

- Children under age 14 have actually shown a population decrease since 1960 in both Kansas and the U.S.
- Teen youth (ages 14-17), after steady population growth in the 1960s, has shown decreased growth through the '70s.
- Adult youth (ages 18-24) showed rapid growth in the 1960s but slower growth between 1970 and 1980.
- Adults over age 24 showed increased population growth from 1970 to 1980.

These trends suggest that—at least for the immediate future—both the Kansas and U.S. populations will be growing older relative to a median age. The youth groups will first exhibit slower growth and then will demonstrate a decreased population growth rate in coming years. This pattern represents a situation which could have considerable effect on both the labor force and the educational systems for the state and nation.

Education and School Enrollment

The census data also reveal some interesting trends concerning the level of education in Kansas. In 1980, Kansans were more highly educated than ever before: Table 5 shows that, for the last three censuses, the median years of schooling for Kansans average 12.5.

The median number of years of schooling for a Kansas adult in 1980 increased to 12.6. Even more noticeable is that the rural Kansan closed the gap on his urban counterpart in the last 20 years to make educational levels achieved by each group roughly equal. Of those Kansans over 24 years old in 1980, 73.3

Table 5
Median Years of School by Census Year for Kansas

	1960	1970	1980
Kansas	11.6	12.3	12.6
Urban	12.1	12.4	12.7
Rural	10.5	12.1	12.5

percent had finished high school, and 17 percent had four or more years of college. These were remarkable increases from the 1960 figures of 48.2 percent and 8.2 percent, respectively.

Kansas adult youth exhibited increased levels of educational attainment between the 1960 and 1980 periods as well. In 1980, 80.3 percent of Kansas adult youth (ages 18-24) had completed high school, while 7.0 percent had completed four years of college. In 1960, these figures were 70.6 percent and 4.5 percent. Most notable again were the gains that rural adult youths were able to achieve during this period. For example, in 1960 less than 70 percent of rural adult youths had completed high school compared to 80.9 percent in 1980.

School enrollment data from the 1980 *Census* show mixed results. In general, a higher percent of rural youths are enrolled in school until age 18. Beyond age 18, urban school enrollment—as one would probably expect—is greater. School enrollment figures for 1980 are generally down from 1970 highs for all classes over age 15 (see Table 6).

Although national census data from 1980 on school enrollment and educational attainment are incomplete, Kansans have compared very favorably to national trends in the past. On average, Kansans show increased school enrollment and higher educational attainment than the U.S. as a whole.

Labor Force

The Kansas labor force data show three significant trends:

- Labor force participation rates for adult youth and adults have increased.
- Labor force participation rates for teen youth decreased for the state.
- Kansas labor force participation rates are greater than U.S. rates.

It is generally argued that labor force participation has increased universally in recent years due to the influx of female workers into the work force. Kansas labor force participation rates reflect that increase as detailed in Table 7.

This trend is especially evident in the 20-24 age group where participation rates increased from 54.5 percent to 72.8 percent between 1960 and 1980. Changes in 1967 of the census definition of labor force and in 1980 of the age grouping of labor force data make comparisons difficult; however, a definite trend toward decreased labor participation rates in the 14-17 age group can be observed.

Although U.S. 1980 *Census* data on labor force participation are unavailable, trends in past years show that labor force participation rates in all but the 20-24 age group were greater for Kansas than the U.S. as a whole. This trend has held true for both the urban and rural labor force.

Steve Thomas
Research Assistant
The Institute for Economic and Business Research

Table 6
% Enrolled in School by Age Group

	14-15	16-17	18-19	20-24
1980	98.1	89.4	51.7	23.3
1970	96.3	90.7	60.8	23.9
1960	95.8	86.1	46.0	16.6

Table 7
Labor Force Participation Rates by Age Group and Census Year

	14-15	16-19	20-24	Over 24
1980	na	54.7	72.8	63.4
1970	13.7	43.6	57.9	55.9
1960	18.0	42.6	54.5	55.6

Economic Conditions
The National Review

Another Year of Recovery?

According to the National Bureau of Economic Research, the recent recession ended last November. Therefore, the recovery has safely reached its first birthday. Somewhat ominously, however, the most recent previous recovery (that following the 1980 recession) lasted only about a year before giving way to the steep 1981-82 decline. Fortunately, though, forecasters have good reason to be confident that the current recovery is not about to abort and that, rather, the stage is set for a second year of solid, if not spectacular, growth.

The character of the second year is presently being formed by an ebbing of the wave of growth that roared through the second quarter of 1983. That crest generated an annualized rate of increase in real GNP of 9.7 percent and then coasted through the third quarter at a still surprisingly swift 7.0 percent clip.

Such tidal growth caught the experts by surprise. As a group, they had been predicting quarterly growth for 1983 only in the 3.0-4.5 percent range—figures which would have translated into a relatively meager recovery by historical standards. As described above, the reality of the recovery has been, however, quite the opposite. Following a quarter of slow acceleration (2.6 percent real growth in 1983:I), the middle quarters' growth rates have been high by historical standards (see *KBR*, vol. 6, nos. 4, 5 for a more detailed analysis of recent recoveries), and the impression among the experts is that the pace could not be maintained without refueling inflation and, in turn, reigniting interest rates, thereby endangering the recovery. Thus, it is with some relief that many analysts have viewed the deceleration which apparently occurred through July and August.

The mid-summer slowdown, described by some forecasters as "a catching of breath," was concentrated primarily in the consumer spending sector. Consumers, after months of keeping purses tightly snapped, went on a shopping spree this spring, increasing second quarter purchases at an inflation-adjusted rate of 10 percent over the previous quarter. The spending surge occurred despite the fact that disposable personal income increased only a modest 2.9 percent during 1983:II. Necessarily, as a result, savings rates dropped. In fact, they dropped to their lowest rate in 33 years.

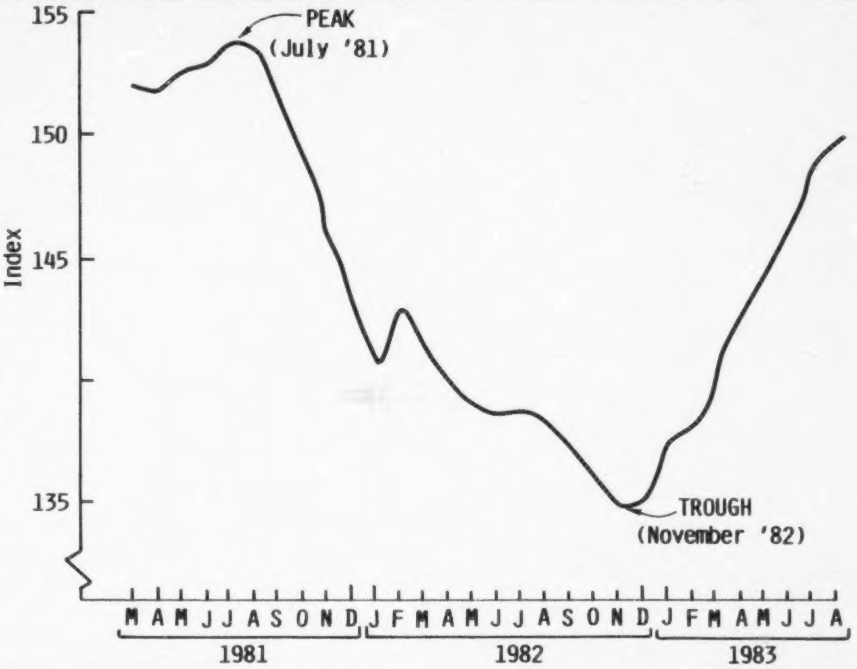
Of course, this type of spending could not and did not continue. Retail sales fell 0.2 percent in July and 1.4 percent in August to begin the third quarter. As a result of the spending slowdown, savings rates accelerated to more normal levels (5.2 percent in August compared to a 4.0 percent average in the second quarter).

The housing industry, the recovery's other bellwether, also appears poised to move into a phase of moderation. Starts in August jumped 8.4 percent to their highest level in five years. However, building permits issued for the month were down 6.5 percent from July, an harbinger of the forthcoming construction slowdown.

Once again, though, it appears that the imminent slackening of pace in the housing industry will be the inevitable result of an exaggerated rate of growth. In fact, housing starts for 1983 are expected to total 1.7 million or 640,000 more than 1982. This construction binge coupled with an annoying, demand-dampening summer month upturn in mortgage rates has created a temporary housing glut which will be worked off during the remaining fall and winter months.

Although most major indicators of economic activity have been on the increase now for close to a year, in many cases they have not yet attained their prerecession plateaus. Industrial production, for example, as measured by the Federal Reserve's Index, stood at 149.9 in August, representing an 11.1 percent increase over its value during the recession's trough. Nonetheless, the Index's value today remains 2.6 percent below its historical peak recorded prior to the onset of the most recent recession. Figure 1 depicts industrial production's peak to trough movement and its subsequent recovery.

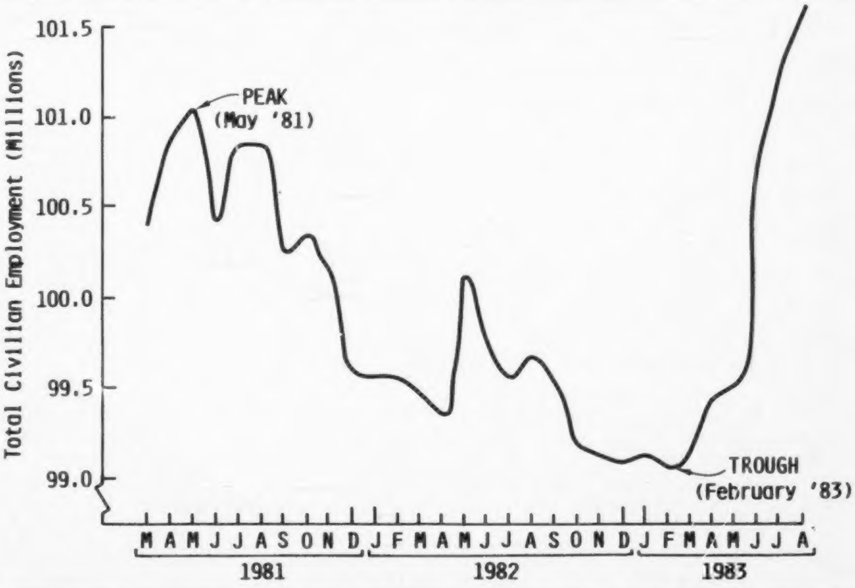
Figure 1
Industrial Production Index
(1967 = 100)



Total civilian employment reached an all-time peak in May 1981, two months before industrial production crested. At that time, 101,045,000 people were employed according to the Bureau of Labor Statistics' definition. Employment's subsequent decline (depicted in Figure 2), though punctuated by periodic upturns, for the most part continued unabated for 21 months, finally bottoming out in February of this year at 99,063,000 workers. The decline in jobs totaled nearly two million or 2.0 percent of total prerecession jobs and manifested itself in an unemployment rate which reached 10.8 percent during the recession's trough. Presently, total employment has climbed to 101.6 million workers, and the unemployment rate has declined to 9.5 percent, compared to 7.0 percent at the expansionary peak.

Therefore, although the total number of workers has ascended to new heights, the swelling of the unemployment ranks, caused by a steady stream of entrants into the work force, has only begun to subside. In fact, based upon most analysts' predictions, unem-

Figure 2
Total Civilian Employment: Recession and Recovery



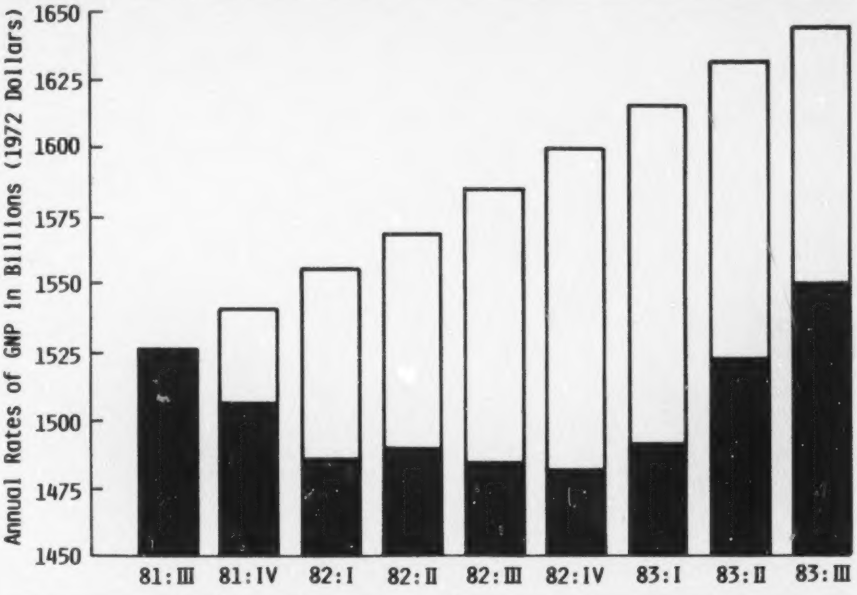
ployment rates will not attain prerecession levels until the latter part of 1985 and then only if the recovery remains on pace.

Perhaps the best measure of a recession's impact is its influence upon real GNP; that is, its effect upon inflation-adjusted production of goods and services. The secular peak for this measure was attained in the third quarter of 1981 when GNP, measured in 1972 dollars, reached 1,525.8 billion at an annualized rate. By way of contrast, its annualized value during the 1982:IV trough was 1,480.7 billion dollars, a decline of 45 billion dollars or 2.9 percent. Because of the present recovery's strength, it appears that real output will have managed to regain all of its lost ground during the first three quarters of this year and that the annualized rate of real GNP for 1983:III will represent, when all adjustments are made, a new record high.

This sort of comparison may be misleading, however, because it neglects the growth in real GNP which would have occurred under normal circumstances had not the recession set in. Figure 3 illustrates *potential* real GNP for the recessionary phase and compares it to actual real GNP. The figure is based upon a normal real growth rate of about 4.0 percent annually. Therefore, each bar measures potential GNP for a particular quarter relative to the 1981:III prerecession peak. The solid portion of each bar measures actual real GNP for that quarter. Using this basis for comparison, the gap between actual and potential GNP reached its apex in 1983:I at about 125 billion dollars. It remains at about 90 billion dollars even after the substantial growth recorded during the second and third quarters of this year. In fact, when viewed from this perspective, several sustained years of above normal growth would be required to completely close the gap between actual and potential GNP.

Figure 3

Actual Real GNP and Potential Real GNP: Recession and Recovery



Outlook

Real GNP should increase at an annualized rate of 5.0-6.0 percent during the fourth quarter, but the composition of the growth is expected to change somewhat. In particular, consumers are no longer counted on to carry the ball to the extent they did in the second and third quarters. Rather, it is expected that businesses, particularly those in the auto industry, will begin to build inventories upward from their present "bare-bones" levels. Also, business investment, which continues to lag behind prerecession levels, is thought to be poised for a sustained upsurge, given the record 17.6 percent increase in second quarter corporate profits.

Over the longer term, quarterly growth in the 4.0-5.0 percent range is expected throughout 1984. Such growth rates will chip away at the substantial block of unemployment, but progress will be slow. Specifically, unemployment is expected to decline gradually from its present 9.5 percent level but is anticipated to remain in the 8.0-8.5 percent range by the end of 1984.

Substantial slack remains in the economy. The factory capacity utilization rate for August was 76.7 percent, a substantial tightening from the 69.6 percent recorded at the recession's nadir but still significantly below the 81.8 percent average over the last 15 years. The upshot is that several more quarters of solid growth may be expected before present capacity becomes constrained and, thus, threatens to stimulate inflation.

Nevertheless, some increase in the rate of inflation is expected over the next several months. The Consumer Price Index (CPI), which increased only 2.6 percent for the year ending in August, is expected to grow about 4.0-5.0 percent at an annualized rate over the remainder of 1983. In fact, more rapidly rising prices are already beginning to manifest themselves. CPI, for example, rose 0.4 percent in both July and August (about 5.0 percent at an annualized rate), and producer prices, the forebearers of future consumer prices, have been on the rise as well with the finished goods index increasing 0.5 percent in June, 0.1 percent in July, and 0.4 percent in August.

Higher food prices, caused by a tightening of supplies, have inspired some of the recent uptick in inflation as have energy costs. Food inflation is expected to average about 6.0 percent over 1984 with the best guess being that overall CPI will increase about the same amount. Some forecasters, primarily those who place particular emphasis on money supply expansion, expect more substantial inflation—upwards of 8.0 percent in 1984—due to the rapid growth in the money supply. Indeed, this possibility is the primary cause of worry in terms of the recovery's vitality. Substantially higher inflation coupled with projected 170-200 billion dollar deficits over the next few years could put substantial upward pressure on interest rates which would choke off the rebound in consumer and business spending.

Most analysts presently view this scenario as a low likelihood prospect, thus leaving the consensus outlook to be that a second year of recovery is indeed in store.

Richard Sexton
Research Economist
The Institute for Economic
and Business Research

The Kansas Economy

The Kansas Recession

As the recovery of the national economy moves into its second year, the Kansas economy is still trying to rebound from its worst economic decline in 25 years. A brief history of the nation's and state's business cycles highlights the difference between the two patterns. For both the Kansas and national economies, a recession began in January 1980. The national economy, however, turned upward in mid-1980 for about a year of growth before entering the latest recession which lasted until the end of 1982. During this same three-year period, the Kansas economy followed a different path: while the national economy was growing from mid-1980 to mid-1981, the Kansas economy was merely sluggish; then, as the national economy declined, the Kansas economy followed the sharp downward turn. In effect, the Kansas economy was in a recession from January 1980 until quite recently.

The acute and nearly continuous rise in the number of unemployed persons indicates the depth and duration of the Kansas recession (see Table 1). In Kansas, that total increased from 33,600 in 1979:IV to 74,300 in 1982:IV: an increase of more than 40,000; more strikingly yet, a 121.1 percent increase. Table 1 also indicates the path the recession has taken in Kansas. The sharpest increases in unemployment took place in 1980 and 1982 whereas the sluggishness of the Kansas economy in 1981 is borne out by the stable number of unemployed persons during that year.

Unemployment is an indication of the burden of this long recession on Kansans as well. Unemployed persons are less productive and more dependent upon services from the state, particularly income supplements and other temporary subsidies. Thus, the unemployed represent a loss of tax revenue to the state and an additional demand upon the services provided by the state. With the number of unemployed persons more than doubling during the recession, the financial strain the state and local governments have experienced over the past few years is not surprising.

The increase in the number of unemployed persons, however, does not represent the full extent of the damage done to the Kansas economy by the recession. Throughout the 1970s, nonfarm wage and salary employment steadily grew from 2.0 to 4.0 percent per year with one exception during the 1973-1975 recession; and even during that recession it grew slightly. As Table 2 indicates, this growth was first slowed and then dramatically reversed during the past recession. From the first half of 1979 to the first half of 1980, employment increased 0.9 percent and, over the next year, increased 0.2 percent. Since 1981, however, nonfarm wage and salary employment has declined with the keenest drop occurring from the first half of 1982 to the first half of 1983. It is during this last period that the increase in the number of unemployed persons actually underestimates the harm done to the Kansas economy. From the first half of 1982 to the first half of 1983, the number of unemployed persons increased 10,000 while the drop in nonfarm wage and salary employment was nearly 30,000. Another way to describe the problem is to point out that, from the first half of 1982 to the first half of 1983, Kansas nonfarm wage and salary declined 3.1 percent while, for the U.S., there was a slight increase during the same period.

With these data in mind, the question can be asked: How badly hurt was the Kansas economy during this protracted downturn? And these data suggest, as well, the beginning of an answer: Despite the relatively low unemployment rate in Kansas during the whole recession, economic activity in the state has shrunk, both relative to the national economy and in absolute terms.

Table 1
Number of Unemployed Persons (in thousands)

	I	II	III	IV
1979	38.0	32.5	34.1	33.6
1980	42.6	50.8	50.5	47.1
1981	48.5	43.4	43.1	46.1
1982	59.7	66.0	72.9	74.3
1983	79.2	66.7	—	—

Where, then, has the shrinkage occurred? During the first half of 1979, manufacturing employment averaged 198,000. During the first half of 1983, manufacturing employment averaged 155,700. That difference represents a decline of 21.4 percent in manufacturing employment. What compounds this loss is that, in general, manufacturing jobs are relatively high paying jobs. Thus, a more complete answer to the question is: Kansas has been hurt quite a bit.

The shrinking of the Kansas economy stopped last spring, and, since the second quarter of this year, the state economy has been growing. The growth is evident in both the employment and unemployment data. Since the first quarter of 1983, nonfarm wage and salary employment has been growing steadily, and the number of unemployed persons has dropped significantly. An indication that the employment situation should continue to improve is the news that both initial and continued claims for unemployment benefits are running substantially below the figures for last year. The national recovery also promises better times ahead for the state because, historically, the Kansas economy has tracked fairly closely the behavior of the national economy (see *KBR*, vol. 6, nos. 4 and 5, "Instability in the Kansas Economy"). However, the severity of the most recent recession means that the Kansas economy will have to grow for a period to simply catch-up to where it was at the end of 1979. In contrast to its recent experience, the Kansas economy merely stopped growing during the four previous recessions rather than actually declining. When recoveries from the recessions came in the past, they built upon a plateau in the growth curve of the economy. This time the Kansas economy will have to build up from a valley in the growth curve.

Wichita

The Wichita area was harder hit by this past recession than the rest of Kansas. From January 1982 to January 1983, the number of unemployed persons in the Wichita SMSA increased from 10,400 to 20,400. The severity of the recession to Wichita relative to the state as a whole can be seen by comparing the respective data in Table 2. The percentage decline in nonfarm wage and salary employ-

Table 2
Nonfarm Wage and Salary Employment (in thousands)

	1979	1980	1981	1982	1983
Kansas					
Jan.	913.6	944.4	938.8	930.5	890.5
Feb.	920.4	940.7	937.7	926.6	890.8
March	937.8	947.7	946.7	932.5	898.4
April	947.9	951.3	954.7	932.6	907.4
May	956.1	952.6	958.0	932.8	910.8
June	959.3	947.1	957.5	928.7	912.8
Average	939.2	947.3	948.9	930.6	901.8
% change		0.9	0.2	−1.9	−3.1
Wichita					
Jan.	195.6	205.4	205.3	202.4	182.7
Feb.	197.0	204.0	305.2	200.4	184.9
March	200.8	206.3	207.9	199.6	187.4
April	202.6	206.0	208.2	197.4	189.6
May	203.3	205.3	209.5	195.9	191.1
June	205.4	204.6	210.0	193.3	192.0
Average	200.8	205.3	207.7	198.2	188.0
% change		2.2	1.2	−4.6	−5.1
Kansas Excluding Wichita					
Average	738.4	742.0	741.2	732.4	713.8
% change		0.5	−0.1	−1.2	−2.5

ment from the first half of 1981 to the first half of 1983 was 9.5 percent in Wichita and only 3.7 percent for the state. Much of this decline in Wichita can be traced directly to the aircraft industry. In January 1981, 41,800 persons in Wichita were employed by the aircraft industry. By January 1982, the figure had dropped to 38,200, and, by January 1983, it had dropped all the way down to 24,100, representing a decline of over 40 percent in aircraft employment in two years.

The volatility of the aircraft industry has long been noted. Table 3 provides the monthly value of shipments of civilian aircraft for the first half of the past three years. The total value of shipments for the first half of 1982 was 32.2 percent less than in the first half of 1981. Even as large a decline in the civilian aircraft industry as this difference indicates, it under represents, in fact, the true decline because the influence of inflation has been ignored. Thus, 1982 was a bad year nationally for the civilian aircraft industry as well as a bad year for the civilian aircraft industry in Wichita. As the figures for the first half of 1983 indicate, however, the industry has turned around, and the effect of this reversal has already been felt in Wichita. By this July, aircraft employment in Wichita had increased to 30,000, still down from the 1981 level, but better than July of 1982, and, more importantly, the number is headed in the right direction.

The prospects for growth through 1984 also look impressive for at least three reasons. First, the end of the national recession and the continued recovery through 1984 should help the cyclically sensitive aircraft industry. Second, the glut of used planes which has kept the market depressed for several years seems to have dissipated. Finally, the Defense budget is getting larger not smaller, a direction favorable to the aircraft industry. Of particular interest for Wichita is the fact that Boeing Military Airplane Company's portion of the Defense budget for the next year has increased.

With the turnaround in the aircraft industry and the prospects for continued growth in the aircraft industry through 1984 also good, the Wichita economy should regain the employment it lost during the recession by sometime in 1984.

Robert Glass
Research Assistant
The Institute for Economic
and Business Research

Table 3
Civilian Aircraft Shipped

Half Year	Value of Shipments (thousands of dollars)
1981	
Jan.	711,634
Feb.	1,025,387
March	1,244,535
April	1,398,812
May	1,232,196
June	1,429,642
Total	7,042,206
1982	
Jan.	653,214
Feb.	719,164
March	1,066,934
April	751,288
May	901,431
June	684,801
Total	4,776,832
1983	
Jan.	697,815
Feb.	795,071
March	1,418,888
April	1,107,851
May	790,958
June	1,224,835
Total	6,035,418

Agriculture

Lower Production and Higher Prices

Drought, on the heels of the supply-reducing payment-in-kind (PIK) program, has brought about marked declines in the magnitude of the 1983 U.S. harvest for most grains. In response to tightening supplies, prices have been rising steadily through the summer and into the early fall months.

The extent of the 1983 production decline relative to 1982's record year is illustrated by the All-Crop Production Index, which is expected to fall in 1983 to 88 on a 1977 base (i.e., 1977 = 100) from a value of 119 in 1982 or, in other words, to experience a 26.1 percent decline in production. Most severe is the decline in feed grain production (corn, sorghum, oats, and barley), anticipated to be about 43.5 percent. The drop in food grain production (wheat, rice, and rye), though less dramatic, is nonetheless expected to be substantial: down 17.1 percent from 1982's record harvest.

Table 1
Crop Production for Kansas and the United States

	Kansas						United States					
	Acres Harvested (thousands)		Yield Per Acre		Production (000 of bu.)		Acres Harvested (thousands)		Yield Per Acre		Production (000 of bu.)	
	1982	1983	1982	1983*	1982	1983*	1982	1983	1982	1983*	1982	1983*
Corn Grain, bu.	1,230	920	114.0	90.0	140,220	82,800	73,152	51,564	114.8	85.1	8,397,334	4,390,443
Sorghum Grain, bu.	3,350	2,800	62.0	43.0	207,700	120,400	14,247	10,137	59.0	47.4	841,079	480,012
Soybeans, bu.	1,810	1,610	26.0	15.0	47,060	24,150	70,783	61,748	37.2	24.9	2,276,976	1,534,969
All Wheat, bu.	13,200	10,800	35.0	42.0	462,000	453,600	78,841	60,969	35.6	39.5	2,808,737	2,408,221

* indicated

Table 1 describes the 1983 production pattern by individual grain commodity for the U.S. and Kansas. Nationally, based on information available during the first part of September, the corn harvest was expected to decline 47.7 percent (nearly four billion bushels) from the record harvest in 1982. The expected reduction in harvest is due both to PIK, which reduced acreage 29.5 percent, and the summer drought in the Midwest, which is expected to cause yields to plummet 25.9 percent.

Sorghum plantings for 1983 were reduced 28.8 percent, primarily due to the PIK program. Drought-affected yields are expected to be off 19.7 percent, causing overall production to decline an expected 42.9 percent.

Soybeans, although not part of the PIK program, experienced a 12.8 percent reduction in plantings as farmers outside the PIK program shifted acreage from beans into PIK commodities. Yields are also expected to be off (22.7 percent), causing the expected production decline to total 742 million bushels or 32.6 percent.

The nation's wheat crop, due to its generally earlier harvest and different geographical distribution relative to the feed grains, managed to escape the brunt of the drought. In fact, yield was up almost four bushels per acre from 1982. Acreage planted, however, was down 22.6 percent, thus causing overall production to be down about 400 million bushels (14.2 percent).

The Kansas production picture quite closely mirrors that for the nation. The state's wheat crop was exceptional—per acre yields at 42 bushels represented an all-time record high and a seven bushel improvement over 1982. For this reason, in spite of an 18.2 percent decline in acreage, the 1982 harvest at 453.6 million bushels was the second largest ever for the Sunflower State.

News in respect to the state's other major grains is not as encouraging, however. Sorghum production is expected to decline 42 percent (87.3 million bushels) from 1982, soybean output is expected to drop nearly 50 percent, while the corn grain harvest is expected to be off 40.9 percent.

To place the expected production declines in perspective, Kansas' sorghum harvest, if expectations materialize, will be the smallest since 1964. Corn grain production will not have been as low since 1970, and, similarly, soybean production will be at its lowest level since 1976.

However, in spite of these substantive expected reductions in harvest, Kansas as a state will have fared better agriculturally than many of its midwestern neighbors. The state's grain production is heavily oriented towards wheat (over twice as many acres are in wheat as in corn grain. soybeans, and sorghum grain combined) which experienced a very successful 1983 harvest. Consider, alternatively, the plight of those states in which the agricultural economy is built around corn and/or soybeans. Examples are Illinois, Indiana, and Iowa. The corn harvest in Illinois (the nation's second largest producer) is expected to be off 916 million bushels (60 percent) from last year's record crop. The state's substantial soybean crop is expected to be about 80 million bushels below last year. The story is almost identical in Iowa—an 835 million bushel drop in corn grain production for the nation's largest producer and a 60 million bushel soybean shortfall. In Indiana, the total bushel loss in corn is not as great (470 million bushels), but the percent decline (57.7) is nearly as substantive. In addition, Kansas' easterly neighbor, Missouri, will likely experience a nearly 50 percent or 90 million bushel decline in its important soybean crop.

Given that major production declines are locked into place, attention logically turns to the ramifications for farm prices, farm incomes, and food prices. To be borne in mind initially is that some production decline has been expected since spring (and, indeed, has been hoped for) due to the significant participation in the PIK program. For example, spring projections were that the corn crop would total 5.6 billion bushels. Actual production will be lower than early projections for all major grains except wheat, for which the actual harvest exceeded earlier expectations by 100 million bushels.

The purpose in initiating PIK was to stabilize falling farm prices and reduce the build up of surplus commodities. However, with the drought-induced additional declines in output, prices for some grains have not stabilized but, rather, have moved sharply upward. Table 2 provides some illustrative details for Kansas. Corn in mid-August was selling for about $0.85 more per bushel than a year ago. Since then, although no comprehensive data are yet available, prices have moved even higher. Similarly, sorghum grain has been selling nearly $1.00 above its year-ago prices, while soybean prices have catapulted upwards of $2.50 relative to their August 1982 level. Overall, feed grain prices in August were 29.4 percent above their year-ago levels.

Wheat prices, on the other hand, rose only moderately in spite of reduced plantings in 1983, reflecting the high yields and strong harvest.

Also notable is that livestock prices have dropped relatively sharply over the past months as reflected in the Livestock and Products Price Index which is off 11.0 percent from a year ago. Prices for both cattle and hogs are down in Kansas relative to August 1982. For cattle, the drop is about $6.00/cwt with the highly volatile hog prices falling in excess of $10.00/cwt.

Outlook

During the time period between the early September production forecasts and this late September writing, nothing has happened to improve harvest conditions. In fact, the drought has persisted throughout most of the Midwest. The next harvest projections may, consequently, be reduced from the levels reported in this analysis.

As a result, prices for feed grains will remain significantly above the previous year's depressed levels. However, prices, which

Table 2
Prices Received for Kansas Farm Products

Product	Aug. 15 1983	July 1983	Aug. 1982	Percentage Change Last Month	Year Ago
Wheat, bu.	3.42	3.28	3.29	4.3%	4.0%
Corn, bu.	3.38	3.31	2.54	2.1	33.1
Sorghum Grain, cwt.	5.27	5.12	4.20	2.9	25.5
Soybeans, bu.	8.04	6.16	5.42	30.5	48.3
All Beef Cattle, cwt.	53.80	53.90	60.00	−0.2	−10.3
Hogs, cwt.	49.20	43.40	60.50	13.4	−18.7

have reached $3.60-$3.70/bu. for corn in recent weeks at some central markets, are not likely to continue their rapid rate of ascension due to the deflating influence of record high stocks for most grains. Presently, supplies remain tight because farmers holding free grain have adopted a wait-and-see attitude regarding future price movements before making marketing decisions. In time, however, these stocks will find their way on to the market, thus mitigating the supply-induced escalation in prices.

Information on the level of carry-over for the major grains is contained in Table 3. These data, based on June 1 information, show present storage levels significantly above last year for corn, sorghum, and wheat. For example, corn stocks presently exceed the expected magnitude of the 1983 harvest. In Kansas, grain stocks are large as well and, in each instance, substantially in excess of their 1982 levels.

Table 3
Grain Stocks for Kansas and the United States

United States

Commodity	June 1983 Inventory (million bu.)	June 1982 Inventory (000 bu.)	Percent Change
Wheat, bu.	1,541	1,167	32.0%
Corn, bu.	5,080	3,907	30.0
Sorghum, bu.	530	381	39.0

Kansas

Commodity	June 1983 Inventory (million bu.)	June 1982 Inventory (000 bu.)	Percent Change
Wheat, bu.	81.7	64.9	20.6%
Corn, bu.	171.5	122.5	28.6
Sorghum, bu.	267.0	174.1	33.5

To combat expected record wheat supplies, the USDA has toughened provisions in the 1984 target-price program. The required acreage set aside has been raised from 15 percent to 30 percent with an optional 10-20 percent PIK plan paying out at 75 percent rather than 95 percent of expected yield. Even though the target price at $4.45/bu. is expected to be well above the market rate, 1984 participation is expected to fall below 1983's 75 percent compliance.

Dramatically reduced 1983 harvests will reduce carry-over stocks for coarse grains, thus maintaining some tightness in supply. Prices, though, are not expected to maintain their present ranges, and some moderate fall back is expected over the fall months. Price weakness should persist in the cattle and hog markets over the next few months as farmers react to higher feeding costs by culling and accelerating marketings. Total meat supplies are expected to remain about 4.0 percent above last year's levels throughout 1983. However, placements of cattle on feed are already beginning to decline (10 percent in August for the seven major producing states) as cattlemen anticipate tighter feeding margins throughout the winter. The upshot is that, following a period of increased marketings, the increase in grain costs will eventually inspire reduced supplies of feed cattle and renewed upward pressure on price. At present, the best guess is that this increase will not occur until the third quarter of 1984. No further firming of hog prices is expected in the near term either, as producers cull sows in response to higher feed costs.

Consumer food costs have already begun to inch upward in response to higher farm prices. Nonetheless, the USDA predicts that food inflation will come in at only 2.0-3.0 percent for 1983 but at a somewhat higher rate for 1984 as meat prices begin to turn upward. Regardless, it appears that fears of a renewal of food-price inspired inflation are unfounded. The huge carry-over stocks will soften the impact at the farm level. As well, nonfarm food costs, such as labor and energy, are expected to increase only slightly, if at all, over the next several months.

In spite of the drought, real net cash income for farmers may increase in 1983 for the first time in nine years. Recent USDA projections call for 1983 net cash income in 1972 dollars to be from 17-19 billion dollars, as compared to 17.5 billion dollars for 1982. These figures, however, must be regarded as extremely tentative until the drought's full effects are sorted out. As noted earlier, Kansas should fare somewhat better relative to other states given its strong wheat harvest which, coupled with PIK payments, should offset a small reduction in livestock receipts.

Richard Sexton
Research Economist
The Institute for Economic
and Business Research

TABLE I NATIONAL INDICATORS

INDICATORS			LATEST DATE	LATEST PERIOD	% CHANGE	% CHANGE YEAR AGO
A. INCOME MEASURES						
GROSS NATIONAL PRODUCT	BIL.'72$	(Q)	3RD	1554.1	1.9	4.6
DISPOSABLE PERSONAL INCOME	BIL.'72$	(Q)	3RD	1,100.8	1.6	3.9
PERSONAL CONSUMPTION	BIL.'72$	(Q)	3RD	1,019.2	0.9	5.0
GROSS PRIVATE INVESTMENT	BIL.'72$	(Q)	3RD	230.4	8.8	16.1
NET EXPORT OF GOODS & SER.	BIL.'72$	(Q)	3RD	8.7	-29.3	-63.8
PERSONAL SAVINGS	BIL.'72$	(Q)	3RD	110.9	21.2	-9.8
SAVINGS RATE*	%	(Q)	3RD	4.7	0.7	-0.9
B. LABOR FORCE						
CIVILIAN LABOR FORCE	MIL.	(M)	SEP.	112.4	0.1	1.4
EMPLOYED	MIL.	(M)	SEP.	101.9	0.4	2.4
UNEMPLOYED	MIL.	(M)	SEP.	10.4	-2.3	7.9
UNEMPLOYMENT RATES* (seasonally adj.)						
ALL	%	(M).	SEP.	9.3	-0.2	-0.9
MEN	%	(M)	SEP.	8.7	-0.1	-0.9
WOMEN	%	(M)	SEP.	7.8	-0.2	-0.6
TEENS	%	(M)	SEP.	21.8	-1.2	-2.0
BLACKS	%	(M)	SEP.	19.0	-1.0	-1.2
WHITES	%	(M)	SEP.	8.1	-0.1	-1.0
C. PRODUCTION						
INDUSTRIAL PRODUCTION		(M)	SEP.	153.7	1.5	11.9
DURABLE PRODUCTION		(M)	SEP.	141.7	2.2	14.7
HOUSING STARTS**	TH.	(M)	SEP.	1,652.0	-13.5	45.7
D. PRICES						
1. CONSUMER PRICES						
CPI-W, ALL ITEMS	1967=100	(M)	SEP.	300.8	0.4	2.7
CPI-U, ALL ITEMS	1967=100	(M)	SEP.	301.8	0.5	2.9
FOOD	1967=100	(M)	SEP.	292.5	0.3	1.7
HOUSING	1967=100	(M)	SEP.	326.4	0.5	2.1
APPAREL	1967=100	(M)	SEP.	200.4	1.6	2.8
TRANSPORATION	1967=100	(M)	SEP.	303.7	0.4	2.8
MEDICAL	1967=100	(M)	SEP.	361.2	0.3	7.5
2. PRODUCER PRICES						
ALL COMMODITIES	1967=100	(M)	SEP.	305.3	0.1	2.0
INDUSTRIAL COMMODITIES	1967=100	(M)	SEP.	317.2	-0.1	1.4
CRUDE MATERIALS	1967=100	(M)	SEP.	328.0	0.5	4.0
CAPITAL EQUIPMENT	1967=100	(M)	SEP.	288.8	-0.3	2.4
3. AGRICULTURAL PRICES						
PRICES RECEIVES	1977=100	(M)	SEP.	137.0	4.4	0.7
PRICES PAID	1977=100	(M)	SEP.	161.0	0.6	2.5
PARITY RATIO	1977=100	(M)	SEP.	87.0	6.2	2.7

TABLE I NATIONAL INDICATORS (CONT.)

INDICATORS			LATEST DATE	LATEST PERIOD	% CHANGE	% CHANGE YEAR AGO
E. BANKING AND FINANCE						
1. MONEY SUPPLY MEASURES						
M1	BIL.$	(W)	OCT.19	517.4	-0.5	10.0
2. MONEY SUPLY COMPONENTS						
CURRENCY	BIL.$	(W)	OCT.19	144.1	0.2	9.2
TOTAL CHECKABLE DEPOSITS	BIL.$	(W)	OCT.19	368.6	0.7	10.2
TOTAL TIME DEPOSITS	BIL.$	(W)	OCT.19	703.3	0.1	16.7
3. INTEREST RATES*						
PRIME RATE	%	(W)	OCT.28	11.0	0.0	-1.0
DISCOUNT RATE	%	(W)	OCT.28	8.5	0.0	-1.5
HOME MORTGAGE RATE	%	(W)	AUG.	12.3	0.0	0.3
90 DAY CD'S	%	(W)	OCT.28	9.3	0.1	0.2
3 MONTH T-BILLS	%	(W)	OCT.28	8.7	0.2	0.8

*NUMBERS IN PERCENT CHANGE COLUMN INDICATE ABSOLUTE CHANGE OF THE INDICATOR

TABLE II. GENERAL BUSINESS INDICATORS FOR KANSAS

INDICATORS			LATEST DATE	LATEST PERIOD	% CHANGE	% CHANGE YEAR AGO
MANUFACTURING						
AVERAGE WORK WEEK	HRS.	(M)	SEP.	39.5	0.0	-0.5
AVERAGE WEEKLY EARNINGS	HRS.	(M)	SEP.	367.0	1.5	3.0
INITIAL CLAIMS FOR UN- EMPLOYMENT INSURANCE	TH.	(M)	SEP.	11,374.0	-30.9	-31.4
NEW INCORPORATIONS						
IN-STATE FOR PROFIT		(M)	SEP.	435.0	1.4	39.4
OUT-OF-STATE FOR PROFIT		(M)	SEP.	126.0	-10.6	70.3

SOURCES: RESEARCH AND ANALYSIS SECTION
DIVISION OF STAFF SERVICES
KANSAS DEPARTMENT OF HUMAN RESOURCES
KANSAS SECRETARY OF STATE

TABLE III. EMPLOYMENT AND INCOME IN KANSAS

INDUSTRY			LATEST DATE	LATEST PERIOD	% CHANGE	% CHANGE YEAR AGO
ALL INDUSTRIES	TH.	(M)	SEP.	916.4	2.1	0.5
MANUFACTURING	TH.	(M)	SEP.	162.5	-0.4	2.7
DURABLE GOODS	TH.	(M)	SEP.	98.3	0.0	5.2
STONE, CLAY, GLASS	TH.	(M)	SEP.	7.3	1.4	2.8
PRIMARY METALS	TH.	(M)	SEP.	2.6	0.0	-7.1
FABRICATED MET. PROD.	TH.	(M)	SEP.	11.4	0.9	6.5
MACHINERY (INCL. ELEC.)	TH.	(M)	SEP.	25.1	0.4	-4.9
TRANSPORTATION EQUIP.	TH.	(M)	SEP.	42.2	-0.2	15.6
AIRCRAFT AND PARTS	TH.	(M)	SEP.	30.8	-4.3	11.2
OTHER DURABLE GOODS	TH.	(M)	SEP.	9.7	-2.0	-2.0
NONDURABLE GOODS	TH.	(M)	SEP.	64.2	-1.1	-1.1
FOOD & KINDRED PROD.	TH.	(M)	SEP.	22.8	-0.4	-3.4
MEAT PRODUCTS	TH.	(M)	SEP.	10.0	1.0	-2.9
APPAREL	TH.	(M)	SEP.	3.8	0.0	8.6
PRINTING & PUBLISHING	TH.	(M)	SEP.	15.7	-1.9	0.0
CHEMICALS	TH.	(M)	SEP.	7.1	-5.3	-14.5
PETROLEUM AND COAL	TH.	(M)	SEP.	4.3	-4.4	0.0
OTHER NONDURABLE	TH.	(M)	SEP.	10.5	2.9	10.5
MINING	TH.	(M)	SEP.	17.4	-0.6	0.6
OIL & GAS EXTRACTION	TH.	(M)	SEP.	15.6	-0.6	0.0
CONTRACT CONSTRUCTION	TH.	(M)	SEP.	37.3	-0.8	-0.8
TRANS, COMM, ELEC, GAS	TH.	(M)	SEP.	63.8	9.6	2.6
WHOLESALE TRADE	TH.	(M)	SEP.	65.4	-1.1	-0.9
RETAIL TRADE	TH.	(M)	SEP.	161.4	0.2	0.7
FINANCE, INS., REAL EST.	TH.	(M)	SEP.	48.1	-0.8	-1.0
SERVICES	TH.	(M)	SEP.	173.5	0.3	-0.3
FEDERAL GOVERNMENT	TH.	(M)	SEP.	25.1	-2.0	-0.8
STATE & LOCAL GOVERNMENT	TH.	(M)	SEP.	161.9	10.5	-0.2
PERSONAL INCOME*	MIL.$	(Q)	2ND	29,473.0	1.8	5.2

SOURCES: RESEARCH AND ANALYSIS SECTION
DIVISION OF STAFF SERVICES
KANSAS DEPARTMENT OF HUMAN RESOURCES
BUREAU OF ECONOMIC ANALYSIS

TABLE IV. CONSUMER PRICES--KANSAS CITY
CPI FOR ALL URBAN CONSUMERS (CPI-U)

CATEGORY		LATEST DATE	LATEST PERIOD	% CHANGE	% CHANGE YEAR AGO
ALL ITEMS*	1967=100 (B)	AUG.	301.3	1.3	5.7
FOOD AND BEVERAGE	1967=100 (B)	AUG.	280.5	-0.5	0.9
HOUSING	1967=100 (B)	AUG.	327.8	2.1	8.9
APPAREL AND UPKEEP	1967=100 (B)	AUG.	214.3	0.1	3.7
TRANSPORTATION	1967=100 (B)	AUG.	290.1	1.0	1.3
MEDICAL CARE	1967=100 (B)	AUG.	376.7	2.3	9.9

*ALL PERCENT CHANGES ARE FROM TWO MONTHS PREVIOUS.

SOURCE: BUREAU OF LABOR STATISTICS

TABLE V. EMPLOYMENT AND SALES DATA FOR KANSAS, STATE AND AREAS

AREA			LATEST DATE	LATEST PERIOD	% CHANGE	% CHANGE YEAR AGO
KANSAS--STATEWIDE						
CIVILIAN LABOR FORCE	TH.	(M)	SEP.	1,198.6	-0.1	-1.1
EMPLOYED	TH.	(M)	SEP.	1,144.3	0.4	0.6
FARM	TH.	(M)	SEP.	66.3	-5.0	-2.2
UNEMPLOYED	TH.	(M)	SEP.	54.3	-10.5	-26.2
RATE*	%	(M)	SEP.	4.5	- 0.6	-1.6
RETAIL SALES	MIL.$	(M)	AUG.	1,322.5	6.8	7.6
WICHITA SMSA						
CIVILIAN LABOR FORCE	TH.	(M)	SEP.	219.9	0.0	-2.1
EMPLOYED	TH.	(M)	SEP.	207.1	0.6	1.6
FARM	TH.	(M)	SEP.	2.7	-3.6	0.0
UNEMPLOYED	TH.	(M)	SEP.	12.8	-8.6	-38.5
RATE*	%	(M)	SEP.	5.8	-0.6	-3.5
RETAIL SALES	MIL.$	(M)	AUG.	254.5	1.0	3.2
KANSAS PORTION OF KANSAS CITY SMSA						
CIVILIAN LABOR FORCE	TH.	(M)	SEP.	289.0	0.7	4.1
EMPLOYED	TH.	(M)	SEP.	278.1	1.1	5.5
FARM	TH.	(M)	SEP.	1.4	-6.7	-6.7
UNEMPLOYED	TH.	(M)	SEP.	10.9	-8.4	-21.6
RATE*	TH.	(M)	SEP.	3.8	-0.3	-1.2
RETAIL SALES	MIL.$	(M)	AUG.	1,322.5	6.8	7.6
TOPEKA SMSA						
CIVILIAN LABOR FORCE	TH.	(M)	SEP.	93.0	-0.5	-1.1
EMPLOYED	TH.	(M)	SEP.	88.0	-0.6	-0.1
FARM	TH.	(M)	SEP.	1.9	-5.0	-5.0
UNEMPLOYED	TH.	(M)	SEP.	5.0	0.0	-15.3
RATE*	%	(M)	SEP.	5.4	0.1	-0.9
RETAIL SALES	MIL.$	(M)	AUG.	93.0	17.0	6.3
LAWRENCE SMSA						
CIVILIAN LABOR FORCE	TH.	(M)	SEP.	34.0	4.9	-0.3
EMPLOYED	TH.	(M)	SEP.	32.8	6.1	0.3
FARM	TH.	(M)	SEP.	0.9	0.0	12.5
UNEMPLOYED	TH.	(M)	SEP.	1.2	-20.0	-14.3
RATE*	TH.	(M)	SEP.	3.5	-1.1	-0.6
RETAIL SALES	MIL.$	(M)	AUG.	28.3	-2.4	9.7
RILEY COUNTY--MANHATTAN AREA						
CIVILIAN LABOR FORCE	TH.	(M)	SEP.	23.0	11.1	0.0
EMPLOYED	TH.	(M)	SEP.	22.3	11.5	0.5
FARM	TH.	(M)	SEP.	1.1	-4.3	-2.2
UNEMPLOYED	TH.	(M)	SEP.	0.7	-6.7	-6.7
RATE*	TH.	(M)	SEP.	3.1	-0.5	-0.2
RETAIL SALES	MIL.$	(M)	AUG.	18.3	0.5	4.6

TABLE V. EMPLOYMENT AND SALES DATA FOR KANSAS, STATE AND AREAS (CONT.)

AREA			LATEST DATE	LATEST PERIOD	% CHANGE	% CHANGE YEAR AGO
RENO COUNTY--HUTCHINSON AREA						
CIVILIAN LABOR FORCE	TH.	(M)	SEP.	31.2	4.7	-5.5
EMPLOYED	TH.	(M)	SEP.	29.5	5.4	-1.7
FARM	TH.	(M)	SEP.	1.4	-5.4	0.0
UNEMPLOYED	TH.	(M)	SEP.	1.7	-5.6	-43.3
RATE*	%	(M)	SEP.	5.4	-0.7	3.6
RETAIL SALES	MIL.$	(M)	AUG.	32.5	2.8	1.2
CRAWFORD COUNTY--PITTSBURG AREA						
CIVILIAN LABOR FORCE	TH.	(M)	SEP.	16.7	3.7	-0.6
EMPLOYED	TH.	(M)	SEP.	15.8	4.6	0.6
FARM	TH.	(M)	SEP.	0.9	0.0	0.0
UNEMPLOYED	TH.	(M)	SEP.	0.8	-20.0	-27.3
RATE*	%	(M)	SEP.	5.0	-1.1	-1.7
RETAIL SALES	MIL.$	(M)	AUG.	14.3	15.3	10.0
LYON COUNTY--EMPORIA AREA						
CIVILIAN LABOR FORCE	TH.	(M)	SEP.	17.8	4.1	1.1
EMPLOYED	TH.	(M)	SEP.	17.1	4.3	2.4
FARM	TH.	(M)	SEP.	0.9	0.0	0.0
UNEMPLOYED	TH.	(M)	SEP.	0.7	0.0	-22.2
RATE*	%	(M)	SEP.	3.9	-0.3	-1.2
RETAIL SALES	MIL.$	(M)	AUG.	17.8	3.5	3.5
SALINE COUNTY--SALINA AREA						
CIVILIAN LABOR FORCE	TH.	(M)	SEP.	25.6	0.4	-1.9
EMPLOYED	TH.	(M)	SEP.	24.4	0.8	0.4
FARM	TH.	(M)	SEP.	0.7	-12.5	-12.5
UNEMPLOYED	TH.	(M)	SEP.	1.2	-7.7	-29.4
RATE*	TH.	(M)	SEP.	4.7	-0.3	-1.9
RETAIL SALES	MIL.$	(M)	AUG.	33.2	14.5	8.1
BARTON COUNTY--GREAT BEND AREA						
CIVILIAN LABOR FORCE	TH.	(M)	SEP.	19.3	0.5	-2.0
EMPLOYED	TH.	(M)	SEP.	18.7	1.1	-0.5
FARM	TH.	(M)	SEP.	1.0	0.0	0.0
UNEMPLOYED	TH.	(M)	SEP.	0.7	0.0	-22.2
RATE*	TH.	(M)	SEP.	3.5	-0.2	-1.1
RETAIL SALES	MIL.$	(M)	AUG.	26.8	7.2	-13.8
MONTGOMERY COUNTY--COFFEYVILLE AREA						
CIVILIAN LABOR FORCE	TH.	(M)	SEP.	19.5	0.0	-7.6
EMPLOYED	TH.	(M)	SEP.	17.9	1.1	-2.2
FARM	TH.	(M)	SEP.	0.6	-14.7	-14.7
UNEMPLOYED	TH.	(M)	SEP.	1.6	-11.1	-42.9
RATE*	TH.	(M)	SEP.	8.0	-1.0	-5.4
RETAIL SALES	MIL.$	(M)	MAR.	18.4	5.7	-1.1

*ALL RATE CHANGES INDICATE ABSOLUTE CHANGES INSTEAD OF PERCENT.

NOTE: ALL RETAIL SALES FIGURES ARE MONTHLY AVERAGES FOR THE PRIOR THREE MONTHS

SOURCES: RESEARCH AND ANALYSIS SECTION
DIVISION OF STAFF SERVICES
KANSAS DEPARTMENT OF HUMAN RESOURCES
TAX RESEARCH SECTION
KANSAS DEPARTMENT OF REVENUE

TABLE VI. KANSAS AGRICULTURAL INDICATORS

INDICATORS			LATEST DATE	LATEST PERIOD	% CHANGE	% CHANGE YEAR AGO
PRICES RECEIVED						
ALL FARM PRODUCTS	1967=100	(M)	SEP.	131.0	-3.0	-0.8
ALL CROPS	1967=100	(M)	SEP.	140.0	0.7	18.6
WHEAT	$/BU.	(M)	SEP.	3.5	2.0	5.7
SORGHUM GRAIN	$/CWT.	(M)	SEP.	5.2	2.3	23.6
CORN	$/BU.	(M)	SEP.	3.3	-3.5	40.1
SOYBEANS	$/BU.	(M)	SEP.	8.4	6.9	65.2
ALL HAY	$/TON	(M)	SEP.	69.0	7.8	27.8
LIVESTOCK AND PRODUCTS	1967=100	(M)	SEP.	125.0	-5.3	-11.3
ALL BEEF CATTLE	$/CWT.	(M)	SEP.	52.0	-6.1	-9.4
STEERS AND HEIFERS	$/CWT.	(M)	SEP.	54.0	-4.6	-11.3
CALVES	$/CWT.	(M)	SEP.	56.0	-2.3	10.1
HOGS	$/CWT.	(M)	SEP.	44.7	-2.0	-25.9
MILK	$/CWT.	(M)	SEP.	13.6	1.5	-1.4
PRICES PAID						
HOG CONC. (38%-42%)	$/CWT.	(M)	SEP.	16.0	8.1	15.1
BEEF CATTLE CONC. (32%-36%)	$/CWT.	(M)	SEP.	12.5	0.0	13.6
MILK/FEED PRICE RATIO		(M)	SEP.	1.3	-0.8	-13.3

SOURCES: FARM FINANCE, KCLRS
CROPS, KCLRS
LIVESTOCK ON FEED, KCLRS
BUREAU OF ECONOMIC ANALYSIS

TABLE VII. RETAIL SALES SUBJECT TO SALES TAX BY BUSINESS CLASSIFICATION*

BUSINESS CLASSIFICATION			LATEST DATE	LATEST PERIOD	% CHANGE	% CHANGE YEAR AGO
APPAREL	MIL.$	(M)	AUG.	35.7	8.9	6.3
AUTOMOTIVE	MIL.$	(M)	AUG.	260.8	11.7	15.8
FOOD	MIL.$	(M)	AUG.	322.1	-2.7	4.7
FURNITURE	MIL.$	(M)	AUG.	52.9	13.3	20.0
GENERAL MERCHANDISE	MIL.$	(M)	AUG.	193.9	15.2	3.6
LUMBER & BUILDING MATERIALS	MIL.$	(M)	AUG.	103.0	4.9	10.0
PROF. & PERSONAL SERVICE	MIL.$	(M)	AUG.	62.0	2.6	2.4
PUBLIC UTILITIES	MIL.$	(M)	AUG.	67.3	-21.3	2.5
UNCLASSIFIED	MIL.$	(M)	AUG.	117.3	10.4	0.0
FARM AND GARDEN PRODUCTS	MIL.$	(M)	AUG.	1.2	16.4	14.2
MANUFACTURING & TRADING	MIL.$	(M)	AUG.	85.9	23.2	0.5
MISCELLANEOUS	MIL.$	(M)	AUG.	7.7	-20.3	455.8
TOTAL	MIL.$	(M)	AUG.	1,322.5	6.8	7.6

*ALL FIGURES ARE THE MONTHLY AVERAGES FOR THE PRIOR THREE MONTHS.

SOURCES: TAX RESEARCH SECTION
KANSAS DEPARTMENT OF REVENUE

TABLE VIII. BANKING AND FINANCIAL ACTIVITY IN KANSAS

AREA			LATEST DATE	LATEST PERIOD	% CHANGE	% CHANGE YEAR AGO
MEMBER COMMERCIAL BANKS						
STATEWIDE						
TOTAL DEPOSITS	MIL.$	(M)	SEP.	23,155.0	0.7	14.0
TOTAL CHECKABLE	MIL.$	(M)	SEP.	4,915.0	-0.5	6.9
DEMAND	MIL.$	(M)	SEP.	3,084.0	-0.8	-4.8
OTHER CHECKABLE	MIL.$	(M)	SEP.	1,831.0	0.0	35.1
SMALL TIME AND SAVINGS	MIL.$	(M)	SEP.	15,613.0	1.0	20.9
LARGE TIME	MIL.$	(M)	SEP.	2,627.0	1.6	-6.2
AREA						
KANSAS CITY, KANSAS						
TOTAL LOANS	MIL.$	(M)	SEP.	233.4	-0.1	13.3
REAL ESTATE	MIL.$	(M)	SEP.	34.1	-11.5	36.7
COMMERCIAL & INDUSTRIAL	MIL.$	(M)	SEP.	72.0	9.7	28.7
CONSUMER	MIL.$	(M)	SEP.	40.3	0.0	-3.7
TOTAL DEPOSITS	MIL.$	(M)	SEP.	356.6	1.1	4.2
DEMAND DEPOSITS	MIL.$	(M)	SEP.	100.6	2.1	6.0
TIME AND SAVINGS	MIL.$	(M)	SEP.	239.5	0.4	2.0
TOPEKA*						
TOTAL LOANS	MIL.$	(M)	SEP.	322.9	1.6	17.0
REAL ESTATE	MIL.$	(M)	SEP.	53.6	-0.9	4.8
COMMERCIAL & INDUSTRIAL	MIL.$	(M)	SEP.	174.9	2.9	28.2
CONSUMER	MIL.$	(M)	SEP.	52.3	1.8	5.9
TOTAL DEPOSITS	MIL.$	(M)	SEP.	484.4	2.7	10.9
DEMAND DEPOSITS	MIL.$	(M)	SEP.	154.5	6.6	-0.9
TIME AND SAVINGS	MIL.$	(M)	SEP.	299.2	1.2	16.3
WICHITA*						
TOTAL LOANS	MIL.$	(M)	SEP.	908.4	1.8	13.1
REAL ESTATE	MIL.$	(M)	SEP.	136.4	0.2	19.7
COMMERCIAL & INDUSTRIAL	MIL.$	(M)	SEP.	416.0	1.6	12.8
CONSUMER	MIL.$	(M)	SEP.	237.0	1.1	4.5
TOTAL DEPOSITS	MIL.$	(M)	SEP.	1,417.5	2.8	14.8
DEMAND DEPOSITS	MIL.$	(M)	SEP.	455.3	1.0	-5.3
TIME AND SAVINGS	MIL.$	(M)	SEP.	856.9	3.8	25.6
SAVINGS AND LOANS--STATEWIDE						
LOANS MADE	MIL.$	(M)	AUG.	175.2	22.9	210.0
NET GAIN IN SAVINGS**	MIL.$	(M)	AUG.	43.1	-9.5	--
SAVINGS AND LOANS--CITIES						
KANSAS CITY, KANSAS						
LOANS MADE	MIL.$	(M)	AUG.	30.3	21.2	200.0
NET GAIN IN SAVINGS**	MIL.$	(M)	AUG.	-10.9	0.3	--
TOPEKA						
LOANS MADE	MIL.$	(M)	AUG.	43.9	43.0	644.1
NET GAIN IN SAVINGS**	MIL.$	(M)	AUG.	0.7	-9.0	--
WICHITA						
LOANS MADE	MIL.$	(M)	AUG.	39.2	1.8	336.6
NET GAIN IN SAVINGS**	MIL.$	(M)	AUG.	13.5	-3.5	--

*ONLY LARGE COMMERCIAL BANKS ARE INCLUDED.

**NUMBERS IN PERCENT CHANGE COLUMNS INDICATE ABSOLUTE CHANGE.

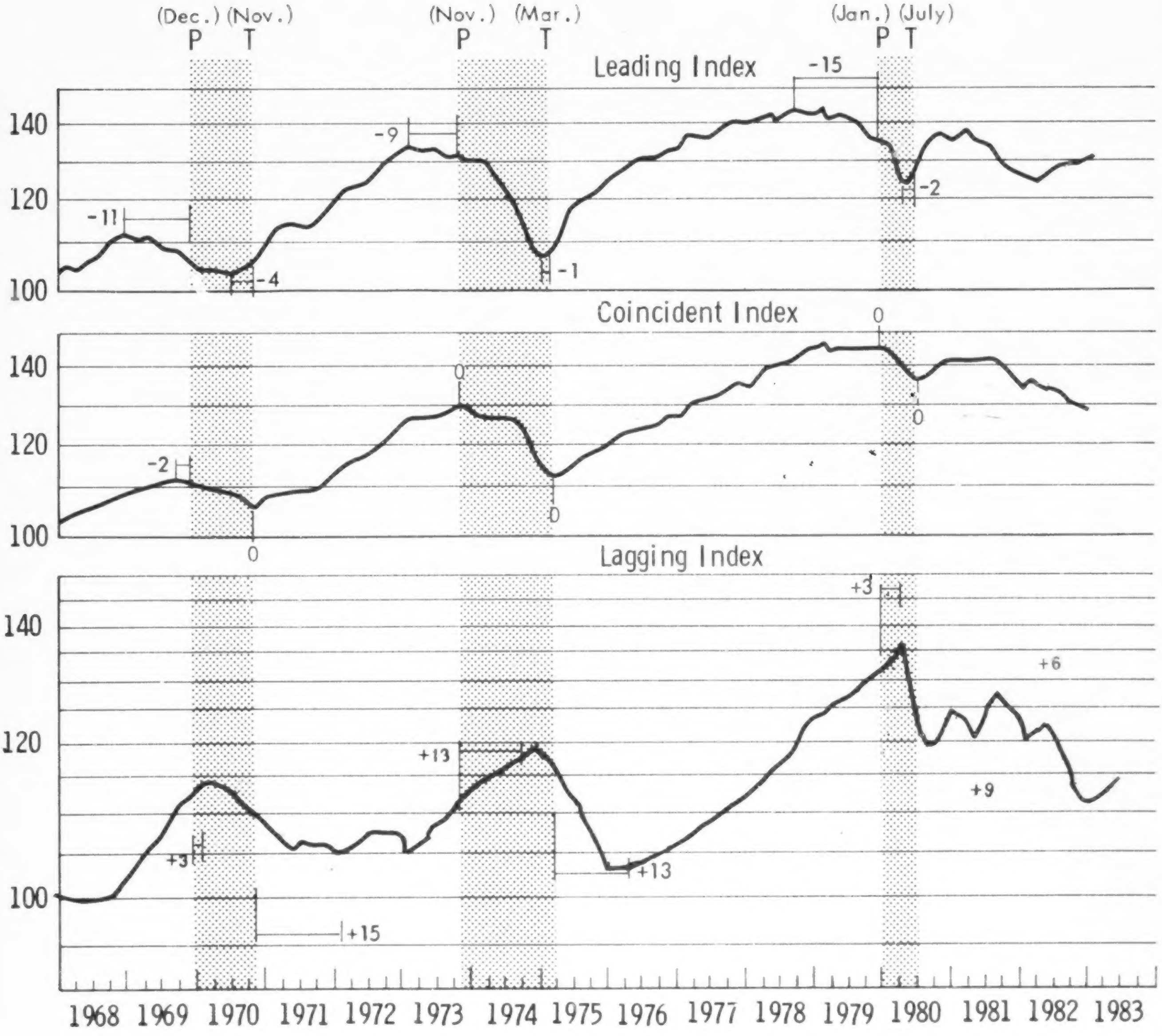
TABLE IX BANKING AND FINANCIAL ACTIVITY IN KANSAS*

AREA			LATEST DATE	LATEST PERIOD	% CHANGE	% CHANGE YEAR AGO
AGGREGATED STATEWIDE DATA						
STATEWIDE						
TOTAL LOANS	MIL.$	(Q)	1ST	8,953.4	-7.3	-0.3
TOTAL DEPOSITS	MIL.$	(Q)	1ST	15,449.6	-6.6	2.9
DEMAND DEPOSITS	MIL.$	(Q)	1ST	3,011.7	-18.9	-8.8
TIME AND SAVINGS	MIL.$	(Q)	1ST	12,454.3	-3.0	9.6
KANSAS CITY, KANSAS						
TOTAL LOANS	MIL.$	(Q)	1ST	1,468.1	-7.8	4.1
REAL ESTATE	MIL.$	(Q)	1ST	534.3	-2.9	7.2
COMMERCIAL & INDUSTRIAL	MIL.$	(Q)	1ST	431.4	-1.7	17.7
CONSUMER	MIL.$	(Q)	1ST	351.8	-12.4	-4.4
TOTAL DEPOSITS	MIL.$	(Q)	1ST	2,295.5	-8.9	3.2
DEMAND DEPOSITS	MIL.$	(Q)	1ST	433.0	-19.9	-3.9
TIME AND SAVINGS	MIL.$	(Q)	1ST	1,862.5	-5.9	5.0
TOPEKA						
TOTAL LOANS	MIL.$	(Q)	1ST	621.8	0.5	3.6
REAL ESTATE	MIL.$	(Q)	1ST	144.8	-0.4	5.9
COMMERCIAL & INDUSTRIAL	MIL.$	(Q)	1ST	263.1	8.7	12.9
CONSUMER	MIL.$	(Q)	1ST	118.0	-1.2	-5.5
TOTAL DEPOSITS	MIL.$	(Q)	1ST	1,008.5	1.4	4.7
DEMAND DEPOSITS	MIL.$	(Q)	1ST	260.8	-7.2	2.8
TIME AND SAVINGS	MIL.$	(Q)	1ST	747.7	0.8	5.4
WICHITA						
TOTAL LOANS	MIL.$	(Q)	1ST	1,556.7	-1.7	5.4
REAL ESTATE	MIL.$	(Q)	1ST	350.1	3.2	6.6
COMMERCIAL & INDUSTRIAL	MIL.$	(Q)	1ST	682.8	-2.1	15.4
CONSUMER	MIL.$	(Q)	1ST	351.6	-4.3	-0.6
TOTAL DEPOSITS	MIL.$	(Q)	1ST	2,686.6	-0.2	14.6
DEMAND DEPOSITS	MIL.$	(Q)	1ST	749.9	-9.3	-1.2
TIME AND SAVINGS	MIL.$	(Q)	1ST	1,928.8	3.4	21.7

*This table includes data for all those commercial banks in Kansas required to report tansactions to the Federal Reserve or the FDIC. It represents, therefore, a much more comprehensive, but less timely, compilation that that reported in Table VIII.

COMPOSITE INDEXES

1967 = 100

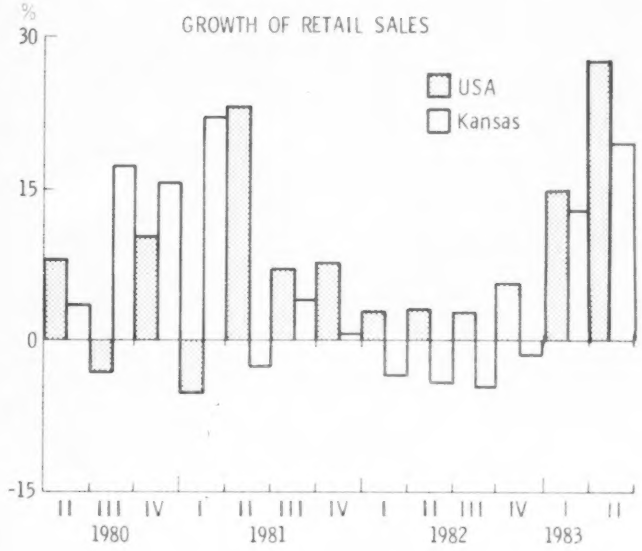


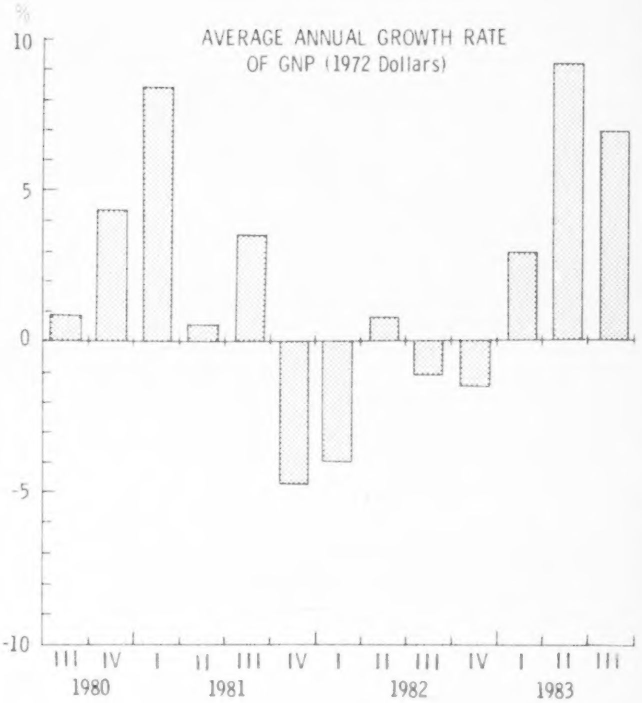
The University of Kansas
Kansas Business Review
Fall 1983, Vol. 7, No. 1

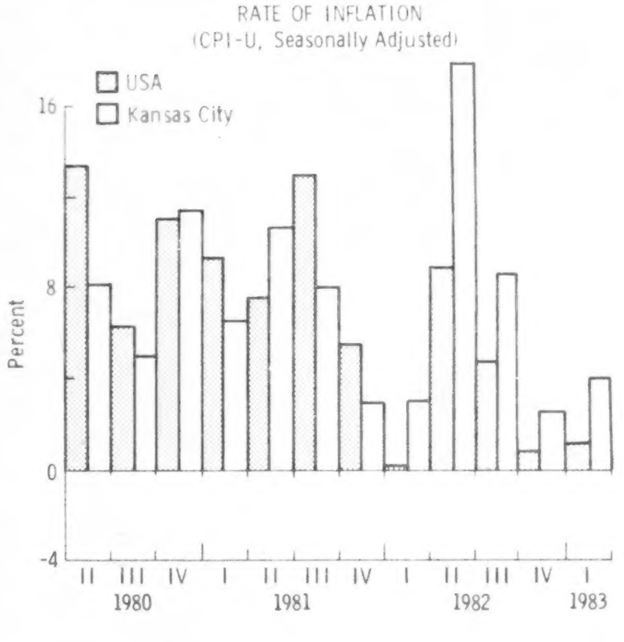
Published quarterly by the University
of Kansas, The Institute for Economic
and Business Research, Lawrence, Kansas 66045

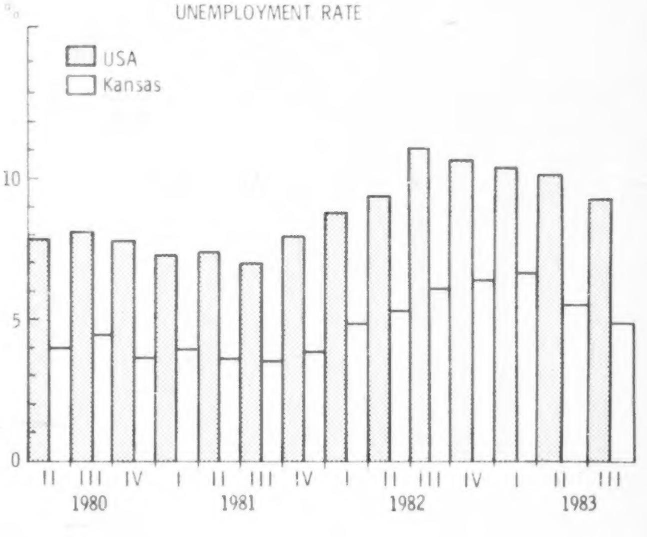
Nonprofit Organization
U.S. Postage
PAID
Lawrence, Kansas
Permit No. 65

CONGRESSIONAL INFO SERVICES/SRI
4520 EAST-WEST HI-WAY #800
WASHINGTON, DC 20014









Vol. 7 No. 2
Winter 1984

KANSAS BUSINESS REVIEW

In this Issue:

Residential Market Values, Income Elasticities, and Property Taxation in Kansas

Terri Sexton

Statewide Reappraisal of Kansas Property

Edwin G. Olson

Economic Conditions
Economic Indicators

Institute for Economic and Business Research, The University of Kansas

KANSAS BUSINESS REVIEW

Winter 1984
Vol. 7, No. 2

In This Issue: **Page**

Residential Market Values, Income Elasticities, and Property Taxation in Kansas 1
Terri Sexton

Statewide Reappraisal of Kansas Property 11
Edwin G. Olson

Economic Conditions

The National Review 16
The Kansas Economy 18

Economic Indicators 23

Conference Announcement

The Kansas Department of Economic Development (KDED) is sponsoring the Kansas Technology Transfer Conference, April 14-15, at the Hilton East Inn in Wichita. Seminars will be held in venture capital acquisition, patenting procedures, industry-university research, marketing and licensing, and venture financing. The registration fee is $35.00 for all conference events. Interested parties should contact Mr. Kevin Carr, KDED, 913-296-3485.

Advisory Board of the Institute for Economic and Business Research: Mr. Edward Bruske, Executive Vice-President, Kansas Association for Commerce and Industry; Executive Vice Chancellor Robert Cobb; Vice Chancellor Frances Horowitz; Professor Anthony Redwood, Director, Institute for Economic and Business Research; Mr. Charles J. Schwartz, Secretary, Kansas Department of Economic Development; Dean John O. Tollefson, School of Business; Professor Thomas J. Weiss, Chairman, Department of Economics.

Editorial Staff—Professor Anthony Redwood, Director; Michael Valk, Editor; Richard Sexton, Research Economist.

Kansas Business Review (KBR) is published four times a year. *KBR* is published by the Institute for Economic and Business Research, 317 Raymond Nichols Hall, The University of Kansas, Lawrence, Kansas 66045. It is designed by the Division of Publications, Office of University Relations.

Manuscripts for publication in *Kansas Business Review* are solicited from readers and should be sent to the editors for consideration.

Opinions expressed in the articles are those of the author(s) and do not necessarily reflect those of The University of Kansas.

CALL FOR PAPERS

The purpose of *Kansas Business Review* is to provide a forum for the dissemination of research studies and reports in the field of economics and business that would be of special interest and relevance to business persons, public officials, and academicians in Kansas and the Plains Region.

The Editorial Review Board welcomes original manuscripts, studies, and research notes from academicians and other persons in any area of economics, business, and business administration. All submissions will be reviewed initially by the editorial staff and, when judged appropriate, will be sent to referees who are knowledgeable about the content.

Manuscripts for consideration should be typed, double spaced, and submitted in triplicate. In general, length should not exceed 3,000 words. Authors are reminded of the combined scholarly/practitioner orientation of *Kansas Business Review*, which necessitates the contents being in a form readable by that audience. Accordingly, complex statistical material—when necessary for inclusion—should be included in appendix form.

Submit manuscripts to: Editor, *Kansas Business Review*, The Institute for Economic and Business Research, 319 Raymond Nichols Hall, The University of Kansas, Lawrence, Kansas 66045.

Residential Market Values, Income Elasticities, and Property Taxation in Kansas

Terri Sexton

Dr. Sexton is an Assistant Professor of Economics at the University of Kansas. The following article is a result of research funded by a University of Kansas General Research Fund allocation.

Introduction

The property tax historically has represented the major source of revenue for state and local governments. Property is highly visible and relatively immobile and, hence, is rendered a ready object of taxation. Moreover, in an agrarian-based economy, such as preindustrial America, it represented a good proxy for income, overall wealth, and, consequently, "ability to pay." In addition, property traditionally has been the immediate beneficiary of many local governmental services, e.g., street and sidewalk maintenance, municipal utility provision, and police and fire protection. As such, judged by a "benefits received" criterion, property has also represented a legitimate object of taxation.

Over time, however, the evolution in the nation's social and economic fabric has begun to undermine the role of the property tax in the revenue generating structure of state and local governments. In particular, income streams—the best barometers of ability to pay—have become more directly identifiable and, therefore, have become an important source at the state and, in some cases, the local level. In addition, the link between property and benefits received from public expenditures has become attenuated by the ascension of social service expenditures within the hierarchy of state and local governmental outlays. For this reason, the property tax has come under both scholarly and public criticism, and, in response to this disfavor, the tax has declined as a percentage of state and local revenues over recent decades. For example, at the national level, revenues extracted from the taxation of property comprised 45 percent of state and local tax revenues in 1957 but only 31 percent in 1981. The decline, however, has been less precipitous—from 87 percent to 77 percent—when only local governmental units are considered.

Although there has also been some deemphasis of the property tax in Kansas, local governmental units in the Sunflower state continue to rely more heavily upon the taxation of property than do most states. For example, property taxes remain the single largest source of state and local revenue in Kansas and presently provide over 91 percent of the total local government tax revenue in Kansas. On a per capita basis, the state's $37.9 local property tax burden in 1980–81 ranked 16 percent above the national average. When specific local units of government are considered, the property tax's importance becomes magnified even further: it provides 100 percent of school district tax revenue, 85 percent of city taxes, and 84 percent of taxes at the county level. State government, in Kansas, however, now relies minimally on property taxes, extracting only a 1.5 mill levy for educational and institutional building funds and collecting only about one percent of tax revenue from this source.

Thus, in spite of a number of court rulings and various voter referenda in Kansas as well as other states, all designed to limit its impact, the property tax remains the predominant source of local government tax revenue. In fact, because it is the one major tax which is administered locally, the property tax is the principal remaining source of fiscal independence for local governments.

This study takes as given the fact that the property tax is now, and in the forseeable future will continue to be, an important revenue source. Its objective in this context is to provide a better understanding of the economic determinants of the property tax base and, through the development and estimation of county-level income elasticities of the residential component of the property tax base, to provide a mechanism whereby local government officials can attain ready access to forecasts of local tax revenues. Just as important, this mechanism will allow public officials to assess trends in jurisdictional tax capacities through estimation of changes in both the assessed value and the market value of the local residential property tax base.

Focus on the residential component of the tax base is based upon the recognition that different classifications of property will likely respond dissimilarly to a given set of economic stimuli. Therefore, to foster a thorough understanding of the property tax and its determinants, stratification by use class is in order. Concentration on the residential component is sensible given that residential land and improvements comprise over one half of the value of total taxable property in Kansas.

In meeting the objectives as presented above, this paper is structured as follows: Section I provides a fuller discussion of the property tax in Kansas, including an overview of the assessment process and a clarification of the distinction between assessed versus market value. This discussion is followed in Section II by a nontechnical description of the economic determinants of the market value of the residential tax base which includes an empirical examination of recent years' changes in the level of housing stock and of the market value of residential property across individual Kansas counties.

The subject of revenue forecasting is addressed in Section III wherein the income elasticity forecasting methodology is described in some detail and estimations of

Property taxes remain the single largest source of state and local revenue in Kansas and presently provide over 91 percent of the total local government tax revenue in Kansas.

Because no comprehensive reassessment has taken place for nearly two decades, blatant inequities have begun to appear throughout the system.

county-level income elasticities of assessed value and market value are presented. In addition, examples are presented illustrating the manner in which the estimated elasticities can be employed by local government officials to estimate forthcoming property tax revenues and to assess their jurisdictional tax capacity. The final section presents a summary of the study's approach and findings.

I. Property Taxation in Kansas

Most results derived from this study are based upon the economically meaningful concept of *market value* (MV) for the residential property tax base. While the derivation of this concept is explored in some detail in the next section, it is important to recognize that the base for property taxation is not the MV of taxable property but, rather, the administratively determined concept of *assessed value* (AV).

The legislature has directed that all property subject to general taxation be valued at 100 percent of its fair MV and be assessed for property tax purposes at 30 percent of this value. The AV of a parcel is multiplied by the mill levy to determine the tax liability. (A mill is one-thousandth of a dollar and thus, for example, a mill rate of 90 would imply 90 dollars of tax per thousand dollars of assessed value.)

If the legislative directive were, indeed, carried forward and property were valued at 100 percent of MV, the fact that it was assessed at some portion of this value would be unimportant. However, determining the market value of the various parcels of property which comprise the tax base in each jurisdiction is a very difficult task, with the actual valuation being determined by assessors, whose judgments, no doubt, are imperfect. To a certain extent, the equalization process can mitigate assessment shortcomings.

Even the problems caused by assessment imperfections would be relatively minor, however, if MV remained fixed with the passage of time. However, as the next section demonstrates, precisely the opposite is true. Market value of property is a highly dynamic variable which responds to changes in a number of economic and demographic stimuli. Therefore, to maintain reasonable approximations of MV from which to determine a tax base it is necessary to have frequent reassessment. Reassessment, though, is a difficult, expensive, and politically sensitive proposition, and, consequently, the last general reassessment in Kansas was initiated in 1963. Because no comprehensive reassessment has taken place for nearly two decades, blatant inequities have begun to appear throughout the system. In particular, tangible personal property, which is probably valued at a rate relatively near to market value, bears a much higher tax liability in relation to MV than does real estate property, which is presently assessed at rates far below its MV. The present result of this circumstance is documented in Table 1 which profiles the statewide breakdown of tax levies between real estate and personal property for the 1980–81 tax year. Because of the assessment biases, taxation of personal property accounted for over 31 percent of the total tangible property tax in the state, and, when rural areas alone are examined, it comprised 42 percent of the total tax.

To attain such a high percentage of revenue from personal property does not seem prudent when one considers that many states do not tax it at all because, unlike real estate, personal property is not immobile and, subsequently, its taxation likely induces resource misallocations. In addition to inequities across classes of property, similar problems have arisen within classes. As the following article in this issue of *Kansas Business Review (KBR)* describes in more detail, similar types of property with equal market values may have widely divergent assessed values.

The vehicle by which assessed values in Kansas can be compared to market values is the assessment-sales ratio studies conducted by the Kansas Department of Revenue. Conducted annually, these studies compare the selling price for property with its present AV. Because only a relatively small portion of real estate changes hands during any year, the ratio studies are statistically imperfect samples, but, nonetheless, they do represent reasonably accurate appraisals of the growing divergence between assessed valuations and actual market values.

Table 2 presents assessed values since 1962 for both rural and urban real estate in Kansas as well as estimated market values for both classes of property. The market values are estimated by dividing each year's assessment-sales ratio (also listed in Table 1) into the total assessed value for that year and multiplying by 100. Because most property has not been reassessed during the 1970s, a period of rapidly escalating real estate prices, it is not surprising to discover that the assesment-sales ratio declined markedly over the most recent decade and that the gap between MV and AV widened commensurately. It is impractical to conduct assessment-sales ratio studies for personal property, but the general consensus is that it is assessed at close to the mandated 30 percent level. As a result, the aforementioned disparity in tax liability between real estate and personal property is created.

Important to recognize, however, is that the assessment-sales ratios in Table 1 are aggregate averages for the state and that the relation between AV and MV may differ between counties and, particularly, between individual

Table 1
Tangible Property Taxes in Kansas for 1980–81

Locally Assessed Properties	General Property Tax (Thousands)	Percent of Total General Property Tax Revenues
Real Estate		
Rural	$171,028	17.0%
Urban	371,186	36.9
Total	542,214	53.9
Personal Property		
Rural	190,421	18.9
Urban	123,363	12.3
Total	313,783	31.2
State Assessed Public Service Co's.		
Rural	91,126	9.1
Urban	55,373	5.5
Total	146,499	14.6
Total Tangible Property	$1,005,497	100%

Source: *Statistical Report of Property Assessment and Taxation*, Kansas Department of Revenue.

Table 2
Assessed Values, Assessment-Sales Ratios, and Market Values for Kansas Real Estate: 1962–82

	Rural Real Estate			Urban Real Estate		
Year	Assessed Value ($1,000,000)	Assessment-Sales Ratio	Market Value ($1,000,000)	Assessed Value ($1,000,000)	Assessment-Sales Ratio	Market Value ($1,000,000)
1962	1,378	22.00*	6,262	1,112	19.00*	5,855
1963	1,380	21.17	6,517	1,149	18.98	6,056
1964	1,369	20.38	6,719	1,201	18.81	6,385
1965	1,396	18.94	7,372	1,332	20.37	6,538
1966	1,400	17.99	7,781	1,381	20.45	6,755
1967	1,421	17.61	8,071	1,452	20.41	7,113
1968	1,556	17.00*	9,153	1,515	20.00*	7,573
1969	1,658	17.00*	9,756	1,575	19.00*	8,290
1970	1,721	17.00*	9,562	1,748	21.00*	8,323
1971	1,730	18.08	9,572	1,885	21.11	8,933
1972	1,762	18.22	9,667	2,092	22.15	9,446
1973	1,754	16.95	10,351	2,115	20.24	10,448
1974	1,760	14.73	11,949	2,192	18.97	11,557
1975	1,795	11.78	15,237	2,282	17.58	12,983
1976	1,840	9.57	19,227	2,359	15.36	15,355
1977	1,876	8.12	23,095	2,460	13.70	17,961
1978	1,916	7.24	26,449	2,578	12.10	21,311
1979	1,957	6.96	28,108	2,661	10.64	25,019
1980	2,000	6.00*	33,333	2,787	9.00*	30,300
1981	2,032	6.00*	33,867	2,86[illegible]	9.00*	31,856
1982	2,062	5.00*	41,240	2,987	8.00*	37,338
Annual Growth Rate	2.4%		8.9%	5.6%		8.4%

*Available to the nearest whole number only

Source: Kansas Department of Revenue, Division of Property Valuation. Full values were computed.

dwelling units. This type of inequity has generated keen dissatisfaction concerning the present system—a discontent which has become manifest through court challenges to the system and through annual calls for reassessment within the legislature—matters once again discussed further in the next article in this issue of *KBR*.

As shown at the bottom of Table 2, assessed property values in Kansas have grown very slowly, at only about a 2.4 percent annual rate (compared to the estimated 8.9 percent annual average growth in market value). In fact, given the failure to systematically reassess, assessed valuation will generally grow only as new construction is completed or substantial improvements to existing structures are made. The result of this circumstance is that the revenue needs of local governments are not met by growth in the assessed property base, and that, therefore, mill rate hikes are oftentimes initiated to provide revenue enhancement.[1]

That the Kansas property tax base bears no close relation to the market value of taxable property in the state is an anomaly and certainly represents a justifiable criticism of the present situation. Although MV changes do not directly imply tax base changes in Kansas, the MV dynamics do reflect changes in tax capacity—the measure of a jurisdiction's ability to raise revenues. Furthermore, if the state does implement an annual reassessment, as many observers are presently suggesting, changes in MV will reflect changes in the tax base that, barring mill rate changes, will also determine the ebb and flow in local governmental receipts.

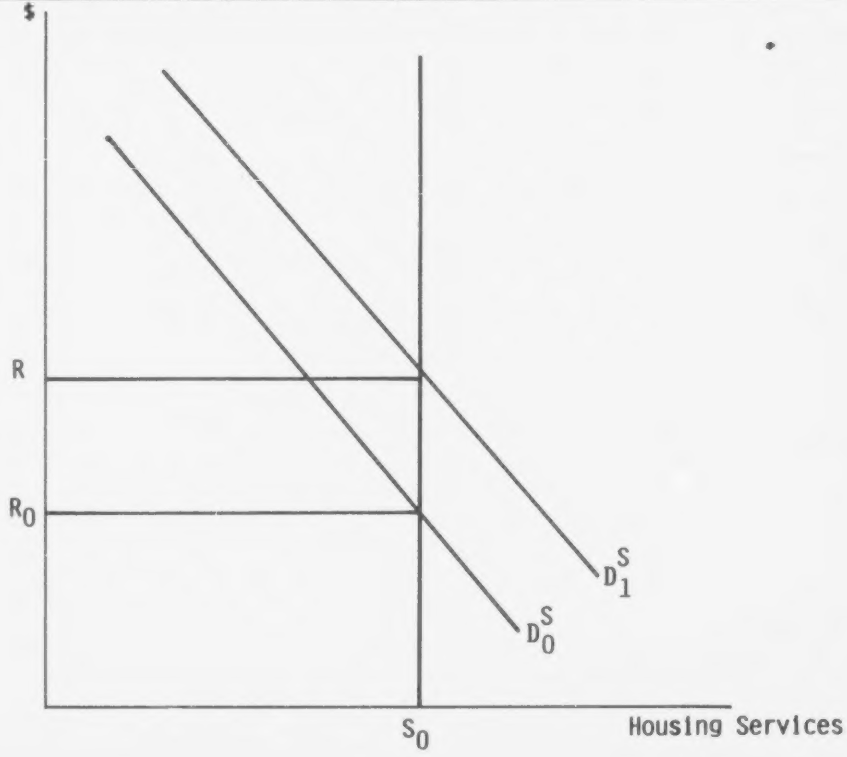
For these reasons, an understanding of MV determinants for residential property is critical to understanding the flow of property tax revenues in Kansas and to facilitating forecasts of future developments. The forthcoming section provides this conceptual background. It clarifies the distinction between market value changes versus assessed value changes in Kansas and also presents county-level estimates of growth in the taxable residential property base since 1974 relative to growth in personal income over the same period.

II. Residential Market Values in Kansas

A. DETERMINANTS OF MARKET VALUE

In its most basic form, the value of residential property within any county is determined by the interaction of supply and demand forces within that county. As a consumption good, housing is demanded because of the flow of services which emanates from it. Consumers' valuation of these services for a given level of housing stock determines a short-run rental rate as is illustrated in Figure 1 where S_0 represents the existing stock of housing services within a county and D_0^S

Figure 1
Determination of Short-Run Rental Rates



That the Kansas property tax base bears no close relation to the market value of taxable property in the state is an anomaly and certainly represents a justifiable criticism of the present situation.

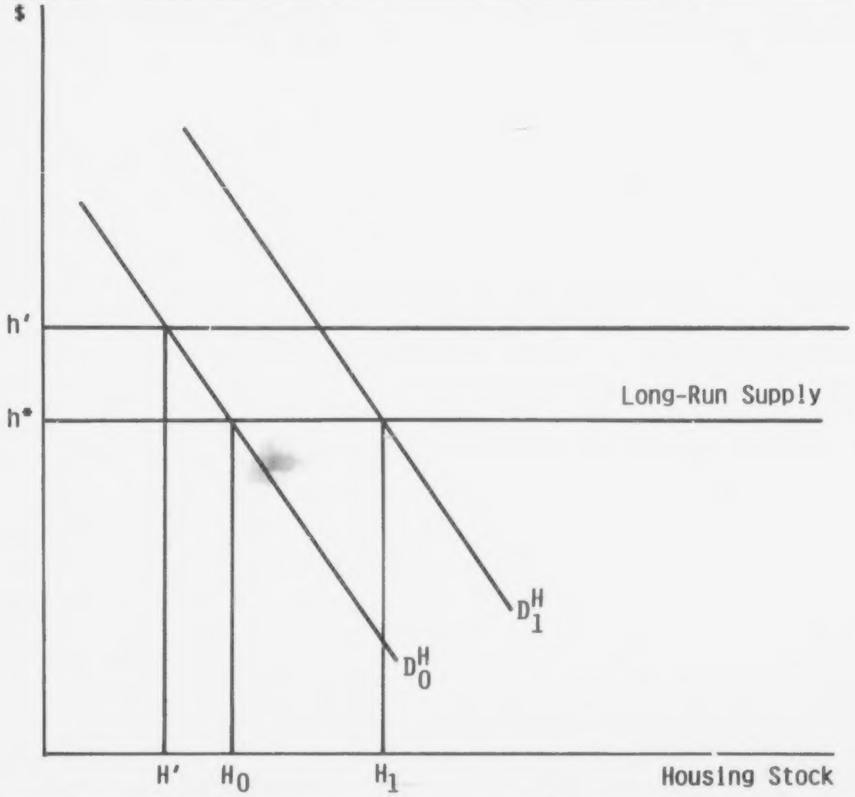
represents the aggregation of individual consumers' demands for those services. The rental rate, R_0, at which consumers are just willing to consume the available service flow, determines an equilibrium.

The value of the housing stock itself is due to the rental income stream which flows from it. This stream is implicit for homeowners, explicit for landlords. A number of parameters can be identified concerning the specific manner in which value is imputed to the housing asset through the rental flow over time:

- The physical value of property declines over time. In fact, most studies estimate that a unit of housing decays from 0.5 percent to 1.5 percent annually. The service flow from the stock and the following rental income stream (explicit or implicit) should decline commensurately.
- Tax effects can have an important influence on the value of property. In particular, features of the income tax system, namely the deductibility of mortgage interest and certain other homeownership expenses, make homeownership a more attractive proposition than it otherwise would be. This effect, though, is counterbalanced by the negative impact which property taxes may have on homeownership. Specifically, it has been suggested theoretically and generally verified empirically that property tax differentials within and between taxing jurisdictions become at least partly *capitalized* (subsumed) into the value of the property itself. As such, the value of two otherwise identical dwellings will be lower for the unit which is assessed the greater tax burden.
- From basic demand theory, the principal factors in determining the demand for housing services within a county will be the level of personal income in the county and the size and composition of the county's population.
- Given time to adjust, the level of the housing stock will respond to changes in the profitability of homebuilding. In fact, considerable empirical evidence exists to support the hypothesis that the home construction industry exhibits *constant costs* which means that the per unit costs of construction are constant, i.e., the industry becomes neither more nor less efficient as the volume of construction expands or contracts. The long-run supply curve in a constant cost industry is horizontal as illustrated in Figure 2 wherein h* denotes a price for housing at which builders find it just profitable to erect new stock. At prices below h*, no new construction takes place.

Figure 2

Long-Run Housing Supply and the Determination of Market Value



The above factors can be synthesized to provide a framework to explain the MV of the residential property base at any given time. As noted, the value of an existing residential stock is determined by the time flow of explicit or implicit rental receipts (adjusted for income tax effects) less the capitalized value of property tax payments to which the property owners are obligated, with each element in the flow adjusted to reflect depreciation. The rental stream, in turn, is determined in a dual fashion. In the short term, as in Figure 1, it is determined by the intersection of the housing service demand with the fixed level of services available. In the longer term, however, the stock of services can and will be adjusted through new construction. Based upon the discussion in the fourth point above, the long-run average supply price for housing is constant at some asset price, h*. Therefore, h* represents a long-run equilibrium average price for housing, i.e., the price which prevails after supply adjustment. It, in turn, defines a long-run equilibrium rental rate, R*, such that over time the rental stream R* adjusted for tax and depreciation effects is just sufficient to induce investors to buy and hold the housing asset at average price h*.

More relevant than h* for tax policy purposes and for purposes of revenue forecasting is the current average housing price, h_0. Estimation of h_0 becomes possible once formulae are developed to express analytically the manner in which short-term and long-term rental rates are determined and the income tax and property tax interactions are expressed. The author has developed and tested such a model. Its end product is a single, nonlinear estimating equation which expresses the current market value of the residential housing stock (the product of the current average price h_0, and the existing fixed level of stock) in any county in terms of the following variables:

1. The level of personal income in the county and its composition,
2. County population and its composition,
3. The effective property tax rate within the county, and
4. Input costs for housing production, e.g., labor, land, and capital costs.

Because income tax effects are constant across counties, they do not contribute to explaining MV variations among counties. Hence, those factors were not explicitly considered in the analysis.

B. CHANGING MARKET VALUES

Once determination has been made of the manner in which value is imputed to a base of taxable property, it becomes possible to investigate and predict forces behind changes in the MV. Based upon the above analysis, changes in county real personal income, its composition, and the magnitude and composition of population in the county will be the primary demand-side factors motivating changes in the MV of the tax base. Alternatively, from the supply side, the principal forces will be those which influence the cost of new construction. Finally, capitalization effects on property value from changing property tax rates may be important.

Figures 1 and 2 can be used to illustrate demand- and supply-induced changes in the MV of the tax base. In Figure 1, higher county personal income, for example, is reflected, among other ways, in terms of a greater demand for housing services—the shift in demand from D_0^S to D_1^S. In the short term, given the fixity of the housing stock, this effect impacts only upon the equilibrium rental rate, which increases from R_0 to R_1. Higher rental rates, of course, encourage buying homes and, thus, raise the asset value of the fixed stock. Consequently, the property tax base rises as well.

Over time, whenever the average asset value of a unit of housing stock exceeds h*, the long-run supply price, new housing starts are generated. When completed, these new additions augment the housing supply and drive rental rates down towards R*, the long-run equilibrium level. In Figure 2, for example, an increase in the demand for housing units from D_0^H to D_1^H, resulting from the higher rental rate R_1, eventually expands the stock from H_0 to H_1 and simultaneously expands the market value of the residential tax base from h^*H_0 to h^*H_1.

Important to note in this discussion is the short-run/long-run dichotomy inherent in the dynamics of the housing market. The effects of demand increases are felt initially only in terms of higher rental rates and higher selling prices for existing units. Eventually, though, the impact is registered only in terms of an increase in the housing stock. Significantly, however, the tax base MV rises in both the short run and the long run. The total distribution of the impact, though, is spread through time—a factor which is important to consider when developing tax revenue forecasts.

Finally, construction cost increases raise the supply price for new housing. This fact, in turn, makes the existing stock more valuable. The likely short-term impact will be, therefore, to raise the MV of the existing base. Over time, as Figure 2 illustrates, the effect of an increase in the supply price from h* to h′ is uncertain. The higher supply price induces higher long-run rental rates thus raising the value of the existing stock, but it also reduces the amount of housing demanded. Thus, whether or not market value increases in response to higher construction costs depends upon whether h′H′ in Figure 2 exceeds h^*H_0.[2]

C. CHANGING RESIDENTIAL MARKET VALUES IN KANSAS

The author has statistically estimated an analytic representation of the model described above. Although it is beyond the scope of this paper to delve into the details of the statistical work, the basic data generated from the analysis are interesting in their own right. Figures 3, 4, and 5, respectively, illustrate the pattern of change in estimated residential market value, residential assessed value, and personal income for Kansas counties from the period 1974–80. Over this seven-year period, nominal market value growth averaged 154 percent across the state. The range of variation among individual counties was quite large, from 55 percent in Crawford County to 394 percent in Linn County. As an examination of Figure 3 indicates, the distribution of market value growth across the state reveals no consistent pattern. Those counties exhibiting more rapid growth (those delineated by the darker shading) are quite scattered across the state.

Income growth is often considered a good barometer of the pattern of change in the value of the property tax base. Although this subject is discussed in more detail in the next section, the matter can be tentatively approached through a comparison of Figures 3 and 5. The latter categorizes personal income (PI) growth by Kansas counties over the 1974–80 period. Statewide, the average growth rate over this interval was 83 percent, but, once again, considerable variability in growth across counties is evident. In fact PI actually declined during this period in nine counties, while a number experienced growth in excess of 100 percent with the maximum rate, 179 percent, being attained in Coffey County.

Unlike Figure 3, in which no distributional pattern is evident for MV growth, Figure 5 does reveal a fairly strong geographical pattern for PI growth, with the slowest growing counties (those with the lighter shadings) concentrated in the northern and western portions of the state while the more rapid growers are situated in the southeast and along the I-70 corridor.

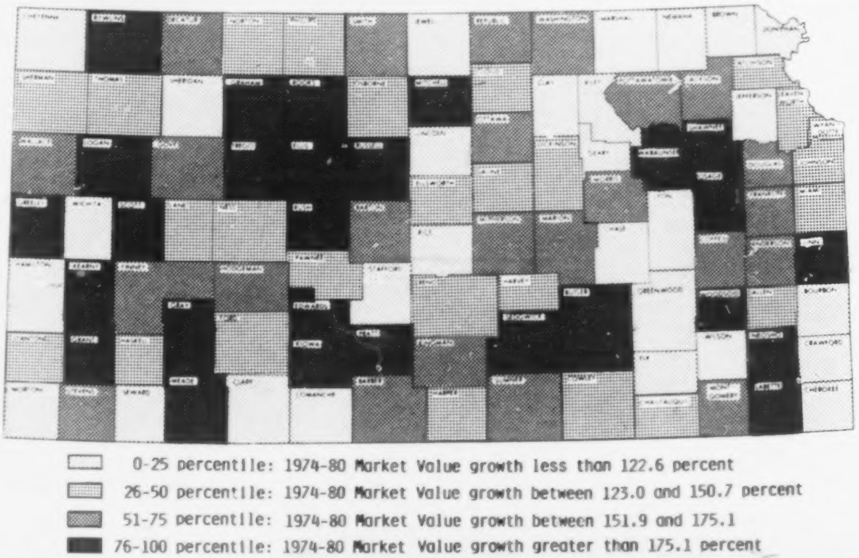
When compared, Figures 3 and 5 do not reveal a striking similarity. In fact, the correlation coefficient between rankings of the counties according to MV growth versus PI growth is only 0.05, which, in essence, indicates that the two rankings are almost totally dissimilar.[3] This conclusion is a forebearer of future results, namely that the relationship between MV and PI is not consistent across counties. This result, in turn, harbors significant implications for the forecasting of local tax revenues.

Finally, Figure 4 compares growth rates for residential assessed values across Kansas counties over the 1974–80 period. The most rapid percentage increases in AV during this period occurred in the west and along the I-70 corridor.

The rank correlation coefficient between AV and PI is very low—only 0.15. More important perhaps is the rather low rank correlation coefficient of 0.39 between AV and MV. The dissimilarity of these rankings verifies the contention that assessed values in Kansas do not presently bear a consistent relationship to actual market values.

Figure 3

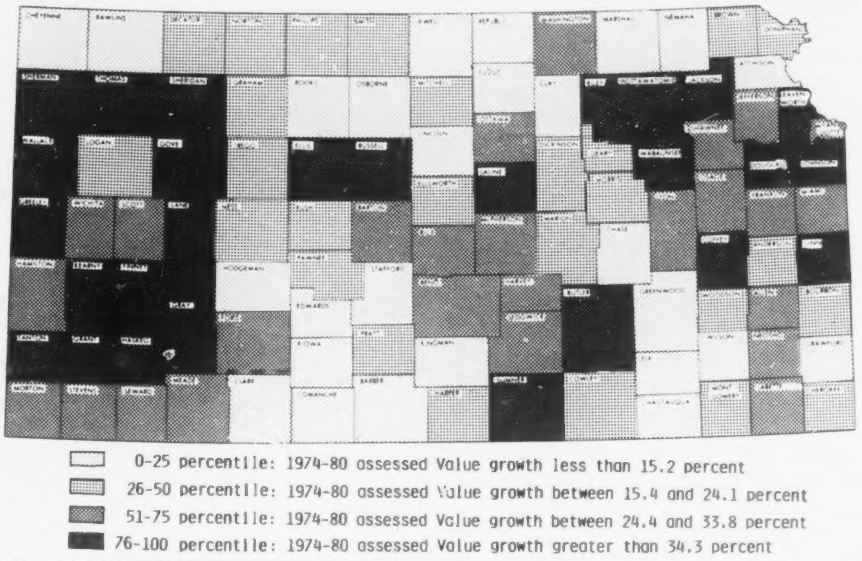
Percentile Rankings of Market Value Growth for Residential Property in Kansas Counties: 1974-80


☐ 0-25 percentile: 1974-80 Market Value growth less than 122.6 percent
▨ 26-50 percentile: 1974-80 Market Value growth between 123.0 and 150.7 percent
▩ 51-75 percentile: 1974-80 Market Value growth between 151.9 and 175.1
■ 76-100 percentile: 1974-80 Market Value growth greater than 175.1 percent

BEST AVAILABLE COPY

Figure 4

Percentile Rankings of Assessed Value Growth for Residential Property in Kansas Counties: 1974-80


☐ 0-25 percentile: 1974-80 assessed Value growth less than 15.2 percent
▨ 26-50 percentile: 1974-80 assessed Value growth between 15.4 and 24.1 percent
▩ 51-75 percentile: 1974-80 assessed Value growth between 24.4 and 33.8 percent
■ 76-100 percentile: 1974-80 assessed Value growth greater than 34.3 percent

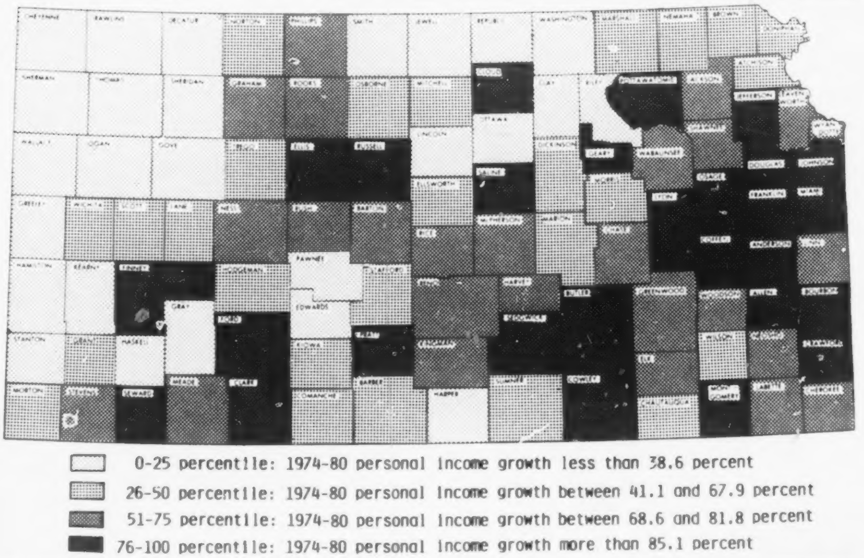
III. Forecasting Property Tax Revenues

Revenue forecasting is very important to state and local governments. Because many are often required to balance their budgets annually, local government expenditures cannot be properly planned without some forecast of the forthcoming flow of tax receipts.

Many state governments employ elaborate statistical models to forecast revenues. However, it is most often implausible to develop similar models for the many governments at the county and subcounty level. An alternative forecasting methodology is the income elasticity approach. Described in some detail by Daicoff (*KBR*, Vol. 6, No. 3, 1983), this method is grounded upon the recognition that income affords a good reading of economic activity and that movements in a number of other key economic variables are closely correlated with income changes.

Figure 5

Percentile Rankings of Personal Income Growth in Kansas Counties: 1974-80


☐ 0-25 percentile: 1974-80 personal income growth less than 38.6 percent
▨ 26-50 percentile: 1974-80 personal income growth between 41.1 and 67.9 percent
▩ 51-75 percentile: 1974-80 personal income growth between 68.6 and 81.8 percent
■ 76-100 percentile: 1974-80 personal income growth more than 85.1 percent

As a tax revenue forecasting tool, the income elasticity approach involves three steps: (1) measuring the relationship between income movements and movements in relevant tax bases, (2) generating forecasts of personal income (PI), and (3) combining the information in (1) and (2) to generate a forecast of tax revenue receipts. Step one involves estimating the income elasticity of the various components in a jurisdiction's tax base. As noted previously, the property tax base comprises the bulk of the overall tax base for most local governments. Its income elasticity, ξ_{PI}, is defined as the percentage change in the value (V) of taxable property induced by a particular percentage change in personal income. Expressed in equation form the elasticity is:

$$\xi_{PI} = \frac{\%\Delta V}{\%\Delta PI} = \frac{\Delta V}{\Delta PI}\,\frac{PI}{V}$$

where the "Δ" symbol denotes change, e.g., $\Delta V = V_1 - V_0$. In Kansas, two measures of V are relevant—the *assessed value*, which measures the actual tax base, and the *market value*, which measures the taxable capacity. Income elasticity estimates for each measure are presented in this section.

A. COMPUTING INCOME ELASTICITIES

Personal income forecasts are generally available from a number of national or regional forecasting services, so the major task involved in employing the income elasticity forecasting method is estimating the income elasticities. Two procedures are commonly used in making these forecasts. The first involves computing *arc elasticities* wherein percentage changes in the tax base and personal income are calculated from two observation points and the elasticity is computed as the simple ratio of the two percentages. This procedure, however, can be criticized because it ignores much of the relevant data, namely all observations on the tax base and income between the two observations used in the arc computation.

Basic regression analysis techniques which employ all available data for the observation interval can be used to surmount this problem. Using this procedure to estimate the elasticity of the property tax base involves estimating the equation:

$$\log V_t = a + b \log PI + u_t$$

where u is an error term, the subscript t denotes time in years, and $\hat{b}$, the statistical estimate for b, represents an unbiased estimate of ξ_{PI}.

Previous studies have provided some information on tax revenue income elasticities for Kansas. For example, Daicoff (1983) calculated the arc income elasticity of *tax receipts* (adjusted for administrative and statutary

BEST AVAILABLE COPY

change) for the entire spectrum of taxes in the state's revenue structure. Also, Glenn Fisher and his colleagues at the Center for Urban Studies at Wichita State University (1979) computed and compared arc income elasticities for assessed value and the market value of the property tax base. They found that, over the 1962–79 period, the AV elasticity was only 0.29 (e.g., a one percent increase in personal income induced only a 0.29 percent increase in the AV of the property tax base) but that the MV elasticity over the same period was 1.03 (MV increased 1.03 percent for each percentage point increase in PI).

The value of the Fisher *et al.* calculations is somewhat vitiated by two factors: they are based on arc calculations, and they represent an aggregate elasticity estimate for the entire state. Recent work by the author has demonstrated that property tax base income elasticities may not be constant across taxing jurisdictions within a state. Therefore, county officials using the statewide elasticity estimates could make substantial forecasting errors if the economic fabric within their jurisdictions dictated a different response pattern to income changes compared to the state average.

To overcome objections to the existing estimates, this study has developed *regression-based* income elasticity estimates for *each* Kansas county. The estimates, presented in Table 3, are derived from annual data for the 1974–80 period. Column 1 in Table 3 contains county-level estimates of the assessed value income elasticity, while column 2 presents market value income elasticity estimates.

As the previous discussion has indicated, both types of elasticities can be useful in underpinning local governmental decision-making. The AV elasticities can be directly used as a revenue forecasting tool because they represent the best statistical estimate of the *actual* responsiveness of the residential tax base to income changes. For example, in Sedgwick County, the best estimate is that each percentage point increase in personal income will induce about a 0.38 percent increase in the residential tax base and that, if the mill rate remains constant, tax collections from this portion of the property tax base will rise by the same percentage.

The MV elasticities contained in column 2 are found by converting the AV of residential property in each county to MV by using the annual assessment-sales ratio estimate for each county. MV income elasticity measures how the MV of taxable property responds to changes in county personal income. Once again using Sedgwick County as the example, the estimate presented in column 2 indicates that each percentage point increase in personal income will generate about a 1.4 percent increase in the MV of residential property in

Table 3
Income Elasticities of the Property Tax Base for Kansas Counties

	Residential Property Tax Base Income Elasticities				
County	(1) Assessed Value	(2) Market Value	(3) Arc Market Value	(4) Assessed Value Coefficient of Determination	(5) Market Value Coefficient of Determination
Allen	0.383	1.347	1.442	0.75	0.96
Anderson	0.291	1.255	1.604	0.87	0.98
Atchison	0.205	1.628	1.802	0.95	0.93
Barber	0.201	1.408	2.049	0.95	0.69
Barton	0.421	1.754	1.619	0.97	0.95
Bourbon	0.327	1.380	1.306	0.89	0.99
Brown	0.274	1.127	1.212	0.89	0.82
Butler	0.463	1.507	1.555	0.99	0.99
Chase	0.082	1.148	1.418	0.68	0.89
Chautauqua	0.136	1.578	1.918	0.89	0.89
Cherokee	0.234	1.386	1.379	0.93	0.99
Cheyenne	-0.031	-0.303	-12.927	0.01	0.02
Clark	0.109	0.679	1.253	0.72	0.45
Clay	0.327	1.645	2.085	0.83	0.73
Cloud	0.224	1.265	1.595	0.99	0.92
Coffey	0.385	1.128	1.188	0.89	0.84
Comanche	0.054	0.491	1.555	0.23	0.28
Cowley	0.194	1.132	1.462	0.59	0.92
Crawford	-0.529	0.538	0.722	0.54	0.59
Decatur	0.200	1.009	3.348	0.60	0.44
Dickinson	0.405	1.831	2.100	0.90	0.80
Doniphan	0.323	1.533	1.818	0.89	0.95
Douglas	0.464	1.589	1.531	0.99	0.99
Edwards	0.327	2.066	2.810	0.83	0.71
Elk	0.149	1.056	1.290	0.92	0.79
Ellis	0.553	1.607	1.484	0.98	0.98
Ellsworth	0.384	1.312	1.855	0.73	0.53
Finney	0.483	0.634	1.185	0.85	0.33
Ford	0.352	1.061	1.085	0.99	0.99
Franklin	0.386	1.553	1.568	1.00	0.99
Geary	0.251	1.014	0.896	0.80	0.85
Gove	0.202	0.538	9.677	0.09	0.07
Graham	0.271	1.460	2.404	0.74	0.69
Grant	0.876	1.422	1.871	0.89	0.70
Gray	0.254	0.475	5.977	0.15	0.07
Greeley	0.158	0.519	2.600	0.29	0.33
Greenwood	0.192	1.422	1.471	0.98	0.88
Hamilton	0.199	0.681	1.619	0.53	0.51
Harper	0.358	1.133	3.567	0.53	0.34
Harvey	0.416	1.417	1.384	0.94	0.93
Haskell	0.163	-0.058	111.664	0.08	0.00
Hodgeman	0.185	1.301	2.285	0.75	0.41
Jackson	0.556	1.645	1.744	0.98	0.96
Jefferson	0.450	1.279	1.129	0.90	0.93
Jewell	0.163	1.937	4.761	0.61	0.59
Johnson	0.400	1.270	1.273	0.99	0.99
Kearny	0.192	0.280	-17.960	0.25	0.07
Kingman	0.243	1.484	1.832	0.84	0.70
Kiowa	0.260	1.613	2.008	0.93	0.74
Labette	0.397	1.678	1.888	0.93	0.97
Lane	0.134	0.247	2.167	0.34	0.15
Leavenworth	0.544	1.441	1.447	1.00	0.97
Lincoln	0.298	2.356	2.500	0.89	0.71
Linn	0.953	2.154	2.647	0.88	0.82
Logan	0.181	0.592	7.270	0.23	0.07
Lyon	0.378	1.318	1.322	0.98	0.97
McPherson	0.496	1.563	1.702	0.98	0.90
Marion	0.329	1.929	2.477	0.85	0.78
Marshall	0.256	1.210	1.433	0.87	0.58
Meade	0.205	1.128	1. 16	0.50	0.73
Miami	0.469	1.508	1. [illegible]	0.96	0.94
Mitchell	0.296	2.082	2.397	0.95	0.92
Montgomery	0.220	1.479	1.417	0.91	0.98
Morris	0.422	2.751	2.740	0.94	0.86
Morton	0.341	1.056	1.452	0.79	0.71
Nemaha	-0.580	1.178	1.757	0.40	0.56
Neosho	0.457	1.683	1.725	0.94	0.99
Ness	0.308	1.658	1.886	0.84	0.75
Norton	0.418	1.746	2.296	0.71	0.80
Osage	0.375	1.506	1.613	0.96	0.92
Osborne	0.264	1.601	2.598	0.78	0.81
Ottawa	0.577	2.527	2.512	0.85	0.84
Pawnee	0.389	2.151	3.369	0.61	0.69
Phillips	0.296	1.476	1.631	0.94	0.95
Pottawatomie	0.580	1.217	1.585	0.99	0.93
Pratt	0.307	1.449	1.635	0.97	0.88
Rawlins	0.058	0.409	23.998	0.03	0.01
Reno	0.487	1.591	1.602	0.99	0.91
Republic	0.232	1.654	6.836	0.50	0.38
Rice	0.371	1.500	1.376	0.92	0.69
Riley	0.726	1.736	2.333	0.82	0.80
Rooks	0.248	2.030	2.115	0.89	0.69
Rush	-0.073	1.062	1.961	0.00	0.26
Russell	0.425	1.496	1.484	0.92	0.94
Saline	0.481	1.430	1.356	0.99	0.95
Scott	0.317	1.495	1.673	0.82	0.83
Sedgwick	0.379	1.409	1.430	0.74	0.98
Seward	0.332	1.059	0.953	0.99	0.99
Shawnee	0.372	1.669	2.011	0.98	0.96
Sheridan	0.339	0.808	3.322	0.12	0.10
Sherman	0.413	0.137	7.200	0.17	0.00
Smith	0.371	1.880	4.108	0.71	0.60
Stafford	0.143	1.237	1.302	0.80	0.60
Stanton	-0.199	-0.507	-6.536	0.10	0.24

(Continued)

Table 3 (Continued)

Residential Property Tax Base Income Elasticities

County	(1) Assessed Value	(2) Market Value	(3) Arc Market Value	(4) Assessed Value Coefficient of Determination	(5) Market Value Coefficient of Determination
Stevens	0.353	1.445	1.492	0.71	0.87
Sumner	1.622	2.029	2.258	0.86	0.88
Thomas	0.831	2.074	2.567	0.74	0.64
Trego	0.331	2.197	2.916	0.87	0.69
Wabaunsee	0.822	1.798	2.122	0.95	0.99
Wallace	0.028	-0.247	-71.964	0.01	0.04
Washington	0.598	2.008	4.317	0.60	0.35
Wichita	0.745	0.799	1.362	0.51	0.44
Wilson	0.192	1.317	1.430	0.86	0.90
Woodson	0.276	1.573	2.168	0.90	0.83
Wyandotte	0.474	1.520	1.478	0.89	0.98
Statewide	0.396	1.415	1.568	--	--

that county. Because property taxation is supposed to be based upon market values of taxable property, the market value elasticities measure changes in the *capacity* to generate tax revenue rather than changes in actual revenue. However, if annual reassessment were instituted in the state and properties, consequently, were assessed at market value, the market value elasticities would be directly relevant for revenue forecasting purposes.

Comparing the estimates in columns 1 and 2 reveals striking but, given the earlier discussion, not entirely unexpected differences. For the most part, the AV elasticities are very low with 83 out of 106 estimates falling in the range from 0.10 to 0.50. In no instance was the elasticity as large as 1.0. By way of contrast, many MV elasticities exceeded 1.0, some even ranging in excess of 2.0.

Statewide averages for each elasticity can be computed by weighting each county's elasticity estimate by the proportion of total state assessed or market value in that county and summing across all counties. Undertaking these computations produces a statewide AV elasticity estimate of 0.396, while the statewide MV estimate is 1.415. Both values are somewhat larger than the comparable arc estimates reported by Fisher *et al.*

The wide divergences between assessed value and market value elasticities for each Kansas county serves as a piquant illustration of the difficulties wrought upon local governmental finance by the failure to reassess. In no case is the actual residential tax base expected to grow proportionally with income. In most cases, its growth rate has been and is apt to be much slower. Hence, growth in tax revenues has been and will continue to be severely limited unless attained via mill levy hikes. However, as column 2 indicates, market values have been growing rapidly in most counties, and, if annual market value assessment were practiced, needed growth in local government revenues could be generated while quite possibly reducing the mill levy during periods of economic expansion.

When comparing the elasticity estimates across the individual counties, one is struck by the wide range of variability exhibited, particularly for the MV estimates, which ranged from a low of −0.501 in Stanton County to a high of 2.751 in Morris County. The AV estimates, though exhibiting somewhat more intercounty stability than the market value measure, still varied from −0.580 in Nemaha County to 0.953 in Linn County. This lack of consistency across the counties may be due, in part, to the relatively brief observation period and, as well, to problems in the quality of data provided for some counties. However, it is also reflective of substantial differences in county economies across the state and of the fact that not all counties will respond similarly to a particular economic phenomenon. It is in this respect that a serious danger exists in using statewide elasticity estimates to forecast individual county or subcounty revenue.

Why elasticities vary so much across individual taxing jurisdictions is an important question and one which has been analyzed in some detail by the author. Although the nature of that inquiry diverges considerably from the present scope, a few summary remarks on the matter are in order. Initially, it must be borne in mind that the income elasticity forecasting method is only a proxy for more analytical forecasting methodologies. In particular, as the discussion in Section II indicated, changing income levels are not the sole determinants of the behavior of market values. Also important are changes in construction costs, tax rates, and the size and composition of the population. When income elasticities such as those in Table 3 are estimated, the resulting coefficient measures not only the manner in which income directly affects market value but also a number of secondary effects wherein, for example, the income pattern in a county affects that county's population which then influences the market value of taxable property in the county.

It is the fact that intercorrelations between income and other, less easily measured, explanatory variables are so strong, which makes the income elasticity method a good forecasting tool. What appears to be true, however, is that the secondary impacts of income changes are not constant across counties. To build upon the present example, rapid income growth in a rural county may not induce a population inmigration comparable to what would occur if similar income growth were experienced in an urban county. For this reason, both assessed value and market value income elasticities would be lower in the rural county, and, therefore, different responses across counties to income changes would also breed intercounty differences in income elasticities.

Another important factor in explaining interjurisdictional variability in income elasticities is the composition of the income change itself. In particular, research by the author indicates that growth in farm income does not contribute significantly to growth in the base of taxable real estate. Hence, responsiveness of property values to a given income change will likely be lower for income changes due largely to developments in the farm sector.[4]

B. MAKING REVENUE FORECASTS

Predictions of future income growth or decline and estimates of the relevant tax base income elasticities are the only tools necessary to develop forecasts of local governmental revenue. However, application of the income elasticity approach must be tempered with judgment and other information. Daicoff's discussion (1983) on the use of income elasticities by the Kansas Consensus Revenue Estimating Group (CREG) provides an example of the proper use of income elasticities to forecast revenue. In essence, CREG uses elasticity-based forecasts as only one input into the final revenue projection.

In judging how much credence to place in the elasticity forecasts, one should evaluate the validity of its two components—namely, the personal income forecast and the elasticity estimates. Ideally, it would be desirable to have state or substate level forecasts for personal income. However, because Kansas is presently one of the few states which lacks its own forecasting model, these projections are not now available. The alternative is to use national forecasts, in which case the key questions which evolve are (1) how good are these forecasts and (2) how applicable are they to Kansas and to subregions within the state?

In addressing the first concern, national forecasting models seem to do a reasonably good job so long as there is no major economic upheaval. A major weakness, however, is that these models do not generally predict cyclical swings well, i.e., the onset of a recessionary or expansionary phase. In judging their applicability to Kansas, recent research by Richard Sexton and Robert Glass (*KBR*, Vol. 6, Nos. 4 and 5, 1983) has demonstrated that the Kansas economy does quite closely mirror behavior at the national level. This fact, though, provides no guarantee that important dissimilarities do not exist for subregions in the state. In fact, Sexton and Glass's research indicated that the state's farm economy followed a course largely independent from the national business cycle. Therefore, counties in Kansas with a significant farm sector would do well to modify national personal income forecasts with independent forecasts of growth in farm income.

To judge the validity of the elasticity estimates themselves, some measure of their past explanatory power is in order. One such measure is the *coefficients of determination* contained in columns 4 and 5 in Table 3. These statistics measure the percentage of the variation in MV or AV over the 1974–80 period which is explained by movements in personal income over that period. Specifically, column 4 contains the coefficients of determination, or R^2 as they are known, for the AV elasticities while column 5 provides the R^2 for the MV elasticities.

An R^2 near 1.0 indicates a "good" statistical fit while a value near zero indicates a poor fit or, in other words, that the estimated relationship has demonstrated little ability to explain past variation in the assessed (market) value. Although an R^2 represents only one measure of the quality of a statistical analysis, officials in counties whose elasticities are supported by large values of R^2 can be assured that income changes have provided a good explanation of assessed (market) value changes in the recent past. In contrast, for counties in which the R^2 is low, little faith should be placed in the elasticity estimates. They have not exhibited good explanatory power and may be indicative of problems in the quality of the data used to attain the relationshps, or, more generally, they may suggest the presence of a more dominant determinant of assessed (market) value than income, one which exhibits considerable independent movement relative to personal income. In essence, officials in these counties must search deeper to find the means to accurately forecast revenues.

To facilitate further comparisons, column 3 in Table 1 provides arc income elasticities of market value for the residential component of the tax base for the 1974–80 period. Comparing these values to the regression-based market value elasticities over the same period, one notices in particular that the arc estimates exhibit much more variability across counties than do the regression-based estimates. Also, upon examining individual counties, it becomes apparent that the two elasticities are not very comparable in a number of cases. Finally, because the arc estimates do not result from a statistical relationship, no measure comparable to R^2 exists for them to provide a means of judging the quality of the estimate.

C. A SAMPLE REVENUE FORECAST: SEDGWICK COUNTY

The AV and MV income elasticity estimates for Sedgwick County are 0.379 and 1.409, respectively. As judged by R^2, both estimates resulted in a good statistical fit for the 1974–80 period. Thus, both estimates may be used with a high degree of confidence.[5]

Most national forecasting services are predicting real income growth in the 4.0–5.0 percent range for 1984. If Sedgwick County officials feel their county's growth pattern will approximate behavior at the national level, the projections can be completed in a straightforward fashion. If the national forecasts are judged inappropriate, they will have to be modified, as discussed previously, to better fit local circumstances.

Assuming the 4.0–5.0 percent income forecast is used, the predicted growth in Sedgwick County's residential AV is from 1.52 to 1.90 percent (4.0×0.379 to 5.0×0.379). Market value growth meanwhile is forecast to range from 5.64 to 7.05 percent. The total assessed value of residential real estate in Sedgwick County based upon 1982 data was $463,842,900. Hence, AV is forecast to grow in 1984 by about $7,031,858 to $8,789,823 ($463,842,900 × .0152 to $463,842,900 × .0190).

The average county mill levy in Sedgwick County is near 100, so tax collections from residential real estate property are expected to rise by about 703 to 880 thousand dollars, provided the mill levy is not changed.

Of course, the forecast growth in MV will be much larger than that projected for AV. In turn, tax receipts, if they were based on MV, would be forecast to rise much more rapidly than the range indicated based upon the AV calculations.

Rural and urban residential real estate comprises about 35 percent of total tangible property in Sedgwick County. Therefore, using the elasticities derived in this study, 1984 revenue estimates have been generated for over one third of Sedgwick County's tangible property tax base. For the reasons described earlier, this study's focus was limited to the residential component of the tax base, so no estimates are provided here for growth in the other real estate (commercial, industrial, agricultural investment), personal property, and state assessed public service company components. Other studies, such as Bridges (1964), which have derived income elasticities for the respective components of the property tax base, indicate that market value elasticities for real estate property and personal property tend to be quite similar. Therefore, as a first approximation, local officials might consider using the MV elasticities reported here to forecast revenue growth from personal property. This methodology, however, will provide appropriate results only if personal property is initially valued at its MV. Given this valuation methodology, the MV elasticities can generate an estimate of the percent growth in the MV of personal property. Conversion to AV can then be made using the legislatively mandated 30 percent rate or whatever rate is used by the local jurisdiction.

Due to space limitations, this study is unable to provide explicit revenue forecasts for the remaining components of the property tax base. They can be obtained, however, in an analogous fashion to the residential component forecasts by obtaining estimates of the income elasticity of each component's assessed value using the methodology described in this section. In essence, the ideal application of the income elasticity forecasting method would entail developing elasticity estimates for each distinct component of the property tax base and using the estimated elasticities to separately forecast changes in each component of the base. The overall forecast would then be obtained by simple aggregation.

IV. Summary and Conclusions

This study has analyzed property taxation in Kansas with special emphasis placed upon the residential component of the property tax base. Although property taxes have been declining as a portion of total revenue for state and local governments, in many instances they remain the largest single source of state and local revenue, and, for many local governments, they continue to represent the sole autonomous revenue source.

Value is imbued into a base of taxable residential real estate through the interaction of supply and demand forces for housing services which yield, over time, a constellation of explicit or implicit market rental rates. These rental fees, when adjusted to reflect depreciation and tax considerations, determine an equilibrium set of prices for the housing asset. The aggregation of these values across a taxing jurisdiction determines the market value of the residential component of the property tax base.

Based upon taxation theory and upon the mandate of the Kansas legislature, market values should form the base for property taxation. In Kansas, however, due to the failure to systematically conduct reassessment, the actual assessed value of property bears no consistent relationship to that prop-

Because of its importance as a local revenue source, accurate forecasts of property tax receipts are critical to the proper functioning of substate-level government.

Regardless of the manner in which the property tax debate is resolved, the income elasticity method will provide local government officials with a tractable forecasting technique, and the elasticities developed in this study should represent good forecasting tools for the next several years.

To facilitate the development of such forecasts, the study provided county-level, regression-based income elasticity estimates for both the assessed value and the market value of the property tax base's residential real estate component. The assessed value elasticities are directly relevant for present forecasting needs while the market value elasticities provide measures of changing tax capacity and may also be useful in forecasting the personal property component of the property tax base.

Property reassessment in Kansas is overdue and eventually must be undertaken. If annual reassessment is an outcome of the current property tax debate, market value elasticities will assume even greater significance. However, regardless of the manner in which the property tax debate is resolved, the income elasticity method will provide local government officials with a tractable forecasting technique, and, bearing in mind the caveats mentioned in the text, the elasticities developed in this study should represent good forecasting tools for the next several years. To obtain the best forecasts possible, however, local officials should update the elasticities as often as possible.

erty's market value. Such a circumstance has bred inequities into the system which have generated persistent but thus far unheeded calls for the reassessment of property and for its valuation at market prices.

Because of its importance as a local revenue source, accurate forecasts of property tax receipts are critical to the proper functioning of substate-level government. This study described in some detail the income elasticity forecasting method which allows local governments to develop forecasts with minimum cost and information requirements.

Footnotes

[1] Some Kansas counties and municipalities are limited in their ability to generate new revenue through property taxation due to the Kansas Tax Lid Law. This legislation mandates that, for those counties and municipalities that have not exempted themselves, the aggregate property tax may not exceed the amount levied during the base years of 1969 or 1970 unless an increase is justified by increases in the valuations of new improvements on real estate or in valuations of personal property. The Tax Lid Law, though, does not preclude revaluation of existing properties to reflect changing market values. Rather, it would require that higher market values be offset by lower levies. See Richard Sexton (*KBR*, Vol. 7, No. 1, pp. 19-20) for further discussion of the Tax Lid Law and its consequences.

[2] As those who have some familiarity with basic economics will recognize, the answer to this question hinges upon whether the demand for housing is *price inelastic*. Price elasticity is the percent change in housing demand induced by a small percent change in the housing price. If the percent change in demand is less than the percent change in price, housing demand is price inelastic in which case market value will rise in response to higher construction costs.

In fact, some empirical evidence does suggest that housing demand is price inelastic. Hence, it may be reasonable to assume that market values will rise due to higher construction costs.

[3] The Spearman rank correlation coefficient measures the degree of similarity or dissimilarity between two rankings. Its values range from – 1.0 to 1.0, with the former denoting perfect negative correlation and the latter indicating perfect positive correlation. A correlation coefficient of zero denotes no pattern of similarity or correlation between the two rankings.

[4] In Kansas, changes in farm income may be reflected in the personal property tax base rather than the real estate tax base. However, because many states do not tax personal property, this avenue by which farm income can influence the tax base does not exist in general.

[5] Examples of counties in which the estimated elasticities did not provide a good statistical fit are Haskell, in which the estimated relation explained less than one percent of the variation in MV and only about eight percent of the movement in AV, and Sherman in which the R^2 was only 0.003 for MV and 0.170 for AV. In general, though, a perusal of Table 3 indicates that such poor fits are the exception rather than the rule. Nonetheless, it bears repeating that elasticities generated from poorly fit statistical relations should not be used at all or, if used, should be viewed circumspectively.

References

Bridges, Benjamin, "Income Elasticity of the Property Tax Base," *National Tax Journal*, 17, September 1964, 253-64.

Daicoff, Darwin W., "Kansas Revenue Estimating," *Kansas Business Review*, 6, January-February 1983, 7-11.

Fisher, Glenn W. and Paula S. Douglass, *A Survey of the Kansas Tax Structure*, Wichita State University, Center for Urban Studies, 1979.

Sexton, Richard, "Fiscal-Restraint Legislation: The Kansas Experience," *Kansas Business Review*, 7, Fall 1983, 19-20.

Sexton, Richard and Robert Glass, "Instability in the Kansas Economy," *Kansas Business Review*, 6, March-April 1983, 1-12.

Statewide Reappraisal of Kansas Property

Edwin G. Olson

Edwin G. Olson is an Assistant Professor of Economics at Kansas State University. He also has an appointment with the Agricultural Experiment Station to study the impact on agriculture of alternative methods for appraising farmland. At Kansas State, he teaches public finance and managerial economics. Dr. Olson's interest in tax revision is longstanding: prior to his appointment to Kansas State University, he worked on tax revision policy for the Washington state government. The following article was developed from Dr. Olson's work at the Kansas Agricultural Experiment Station (Contribution No. 84-220-J). The views expressed are solely his. He gratefully acknowledges the assistance of the Kansas Department of Revenue and the Legislative Research Department in providing data and information for this study.

Introduction

Property reappraisal in Kansas is certain to come. Precursors are with us now: for instance, the legislature annually considers reappraisal bills, and a House bill intended to begin the reappraisal process will be considered this year; the governor has suggested a format for property reappraisal and established a commission to study tax revision; and court cases are in process which may bring judicial directives to reappraise. This study examines several likely results of reappraisal.

At the outset, if reappraisal occurs under existing statutes, it may induce substantial tax shifting among classifications of property, e.g., industrial, commercial, agricultural, and residential. Much of the political effort addressed to property taxation in the past decade, however, has sought to change the Kansas Constitution and statutes in order to protect residences and farms from shifts in tax burdens. These continuing efforts are considered in the study's first section.

Second, even if average assessments by class remain as they are now and total tax collections are held constant, reappraisal can drastically increase tax bills for some properties while it decreases taxes on others within the same classification. Because this aspect of tax shifting has drawn little public attention, Section II will discuss in detail the manner in which individual tax bills may change with reappraisal.

A third possibility examined in Section III is that reappraisal and attendant legislation likely will bring substantial changes in the administration of the property tax. For instance, property may be reappraised annually with computer assistance. These annual updates could mean that property valuations would increase each year during inflationary periods rather than remain undisturbed, as generally has been true in the past.

Finally, the study considers whether annual updates in value may lead some Kansans to once again endorse use-value appraisal of farmland (valuation based solely on income generated by farm production), a procedure which was made constitutional by a favorable statewide vote in 1976 but, as yet, has not been implemented by legislative statutes.

In addition to these considerations of the potential impact of reappraisal, the study's conclusion suggests additions and alternatives to currently popular proposals for revising the property tax system.

I. Reappraisal-Induced Shifting Among Use Classifications

Table 1 contains current assessment ratios for Kansas. Upon considering that table's information in conjunction with the Kansas statutory requirements that property be assessed uniformly at 30 percent of fair market value, one source of concern over reappraisal arises immediately.[1] Namely, that compliance with state law means that assessments of all classes of real property, except utilities, will increase. Within urban areas, residential assessments would usually increase more than commercial and industrial assessments. Valuations of rural real estate generally would increase more than urban properties. In theory, at least, assesments of some farm properties could increase six-fold

Increases in tax bills, though, are quite a different matter from increases in assess-

Table 1
Kansas Assessment Ratios: 1982

Property Classification	Ratio
Locally-Assessed Property	
Urban Real Estate	8.39
Residential	9.48
Multi-family Residential	12.28
Industrial	10.67
Vacant Lots	4.35
Total Urban	8.25*
Rural	
Agricultural	5.00
Home Sites	6.00
Planned Subdivisions	7.75
Commercial	6.00
Industrial	4.48
Total Rural	5.63*
State-Assessed Real Property	
Railroads	**
Utilities and Other Property	30.00***

* Source: Division of Property Valuations, Kansas Department of Revenue.

** Ratio not to exceed that for other business property, in accordance with the federal Railroad Revitalization, Regulatory and Reform Act.

*** Ratio to be 30.00, in accordance with Kansas statutes. Ratio cannot be confirmed from sales data because of lack of utility sales.

ments. Most recent legislation dealing with reappraisal has incorporated a provision that total tax collections within each "tax subdivision" shall remain the same before and after reappraisal. Though the tax base may increase substantially, the tax rate would decrease by an equal percentage.

But even so, if existing statutes regarding uniformity of assessments are enforced, tax bills levied on residences and farms would generally increase whereas utilities and some businesses would experience diminished taxes. (See Daicoff, "Consequences of Property Tax Equalization," *Kansas Business Review*, January, 1981.)

Kansas citizens, the governor, and state legislators—recognizing the potential shifts in property taxes—have encountered a dilemma: how to bring appraisal up-to-date without drastically increasing the property tax burden for homes and farms. One solution to the problem is a constitutional amendment that would allow *classification of property* so that assessment ratios can differ by class (type) of property. Senate Concurrent Resolution No. 1619 was a proposed amendment considered in committee during the 1983 legislative session; it called for four assessment ratios applied to real property. Expressed as percentages, these ratios are shown in Table 2. Specific classifications and ratios also were proposed for personal property: industrial and commercial, inventories, utility property, motor vehicles, and so on. (S.C.R. 1619 contains just one of many suggested sets of ratios for real and personal property.)

Table 2
Proposed Kansas Assessment Ratios

Property Classification	Ratios (as %)
Public Utility Property	30%
Industrial, Commercial, and Transportation Property	20
Agricultural Land Appraised Solely on the Basis of Its Use Value	20
Agricultural Land (Market Appraisal)	6
All Other Urban and Rural Property	8

Because adroitly conceived classifications can minimize shifts of tax burdens to farm and residences from other classes of property, a classification amendment to the Kansas Constitution may well receive favorable votes from both legislators and citizens.

II. Interpersonal and Interfirm Shifting

Even if a constitutional amendment does pass before reappraisal occurs, reappraisal will modify—substantially—the tax bills of many Kansas property owners. The reason is that in almost every Kansas county properties exist within each property class that are assessed and taxed at four or five times the amount of other properties of equal value. (These assessment disparities are documented each year in the *Real Estate Assessment/Sales Ratio Study*, Kansas Department of Revenue, annual series.) As such, reappraisal will assess at a constant ratio properties whose ratios now vary widely from one another, i.e., it will realign tax bills while it realigns assessments.

The prevalence of assessment disparities is indicated by a statistic called the coefficient of deviation, which is a measure of how widely assessment ratios vary around the median (middle) ratio for a class of property. Suppose, for instance, that the median assessment were 10 percent of selling price (market value) for houses. If every house were assessed at that ratio, the coefficient of deviation would be zero. But, in most counties, ratios of assessments to market value vary from one percent to over 100 percent. The coefficient of deviation measures the extent of this dispersion: the greater the dispersion, the greater the coefficient. A rather typical coefficient might be 50.

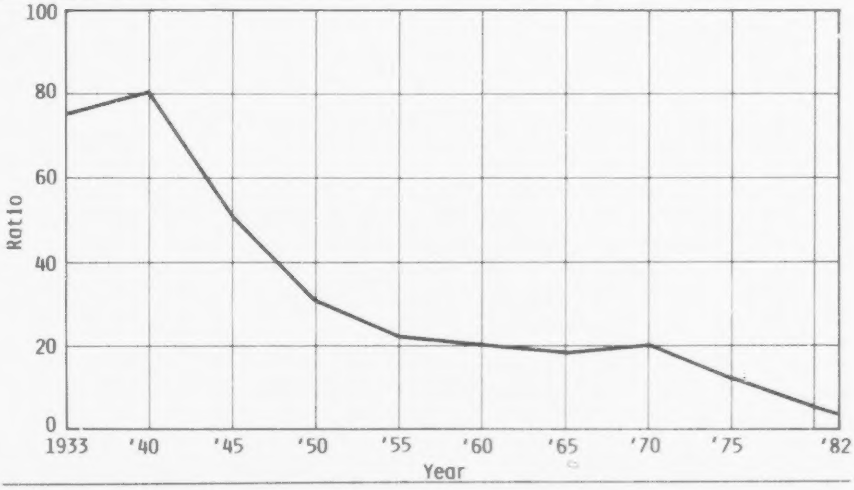
In order for the average deviation to be 50 percent, the range in assessments must be extensive. Consider a group of five houses (or commercial properties or farms), all with identical market value. Within this group of five properties, the middle assessment might be $5,000 (8.0 percent of the market value for a $62,500 house), but the other four $62,500 houses could be assessed anywhere from $1,600 up to $9,000, with values of $2,500 and $7,600 in between. The assessment *and* tax bill for the "high" assessment house is more than five times greater than that of the "low" assessment, yet both houses have identical market value. This example approximates the property tax situation in Kansas.

The author has calculated a statewide index, a composite from all counties, that represents the coefficients of deviation for Kansas property from 1966 to 1982; the results are graphed in Figure 1.[2]

Composite indices are derived for only two broad categories of property: rural and urban. The relatively lower values of indices in the late 1960s and early 1970s occurred when a number of counties were reappraising property; therefore, the appraisals generally were more current than is now the case. The increases in deviations that occurred after 1973 seem to be related at least in part to appraisals growing increasingly out-of-date.

A fundamental principal of tax fairness or equity is the equal treatment of equals: in the case of property taxes, that means equal taxation of properties with equivalent market values (assuming equivalent tax rates).[3] The pronounced disparity of tax burdens which has just been noted is, of course, a direct violation of equity. Public finance economists have devised a quantitative rule of thumb to measure equity of the property tax. The measure is this: to maintain equity (making allowances

Figure 1
Coefficients of Deviation: A Measure of Equity Kansas (1966-1982)

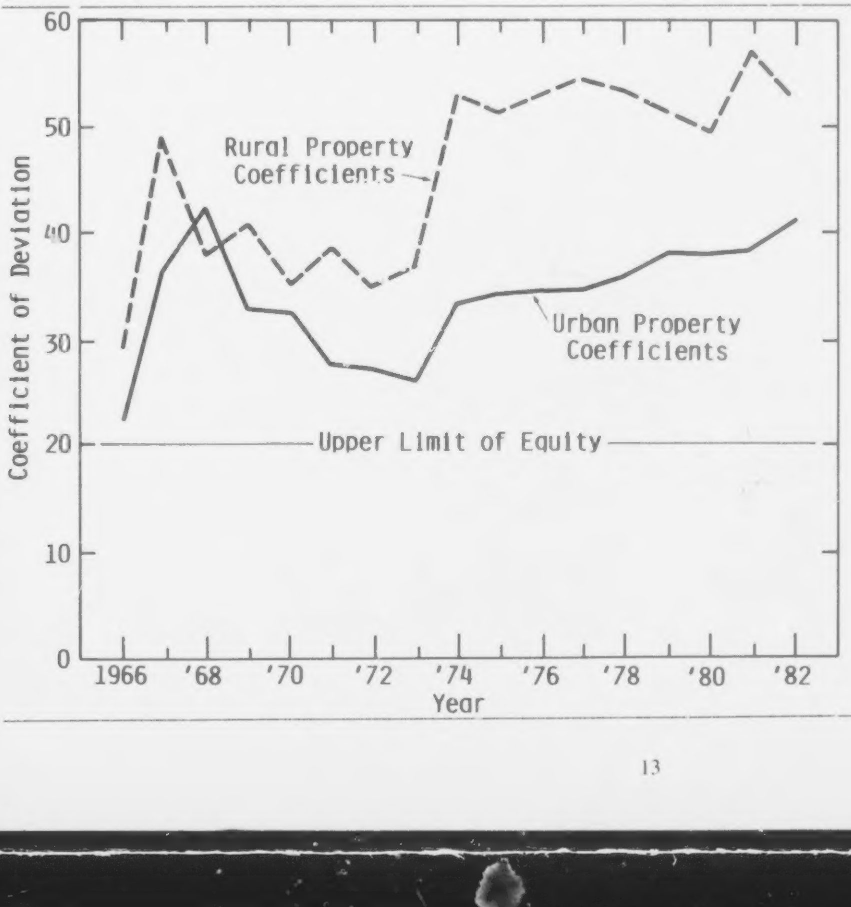


for the vagaries of the real estate market and the difficulty of maintaining current appraisals), the coefficient of deviation should not exceed 20.0. This standard is even incorporated in Kansas statutes (K.S.A. 79-1436B), and it is indicated with the "upper limit for equity" drawn in Figure 1. In none of the years illustrated was a level of 20.0 achieved for the state as a whole, and, in 1982, the coefficients were more than double that level.

To overcome this disparity of assessments among individual cases and attain a reasonable standard of equity, a statewide reappraisal is needed, to be followed by annual updates of assessments as proposed (but not passed) in Senate Bill 275 during the 1983 legislative session.[4] Current appraisal can bring the coefficients below 20.0 and within the domain of equity below the horizontal line in Figure 1.

Although the need for such legislation is apparent, it has not been enacted for a number of reasons. Principal among them is hesitancy engendered by fear of potential tax shifting among property classes. Another reason is that those taxpayers with assessment ratios below the median have been subsidized, in essence, by those with above-median assessment ratios. Hence, although reappraisal will bring welcome relief to some, it will be met in equal measure by surprise and outrage from those whose taxes increase, especially by those whose taxes double or even triple.

Figure 2
Trends in Kansas Assessment/Sale Ratios (1933-1982)



III. The Potential Impact of Annual Reassessment

Annual reappraisal would not only maintain equity, but it would also allow the property tax base to grow apace with the Kansas economy and the rate of inflation.

Figure 2, adapted from the *Real Estate Assessment/Ratio Study* for 1982, indicates how assessments have fallen over time. In the 1930s, '40s, and '50s, the officially mandated ratio was 100 percent, but rising property values coupled with lagging appraisals reduced the ratio of assessments to market value, as shown in the graph. The legislature in 1963, recognizing a *fait accompli*, lowered the official ratio to 30 percent.

Assessment/sales ratios resumed their fall in the 1970s and early 1980s, and the officially mandated ratio could, according to some proposals, now be lowered to 8.0 percent for residences and 6.0 percent for farms. Past experience leads one to expect (if rising market values persevere) a continuation of the downward trend in assessment/sales ratios. To prevent a further drop in assessment/sales ratios, annual assessment updates could be legislated and carried out each year.

In the event of such an enactment, what would happen to tax rates and property tax collections in the future becomes the paramount question. As background for a tentative answer, it should be noted that tangible property tax collections, measured in current dollars, increased by 108 percent from 1970 to 1982, yet property tax collections adjusted for inflation, fell by 8.0 percent. Moreover, property tax collections, as a percent of Kansas personal income, declined by 38 percent from 1970 to 1982.

If the tax base did grow commensurate with the market value of real and personal property, the following could occur: (1) Tax rates likely would fall because the tax lid, however porous it may be, probably would prevent total tax collections from growing at the same rate as the tax base. And, if tax collections grow less rapidly than the tax base, tax rates perforce must fall. (2) But the fall in tax rates may not be as substantial as increases in the tax base: budget categories outside the tax lid may grow more than in the past. In sum, what might happen with annual reappraisal is that (3) local property tax collections and the level of local government services might keep pace with the income of Kansans.

IV. Assessment of Farmland Under Reappraisal

Annual update of appraisals may bring back into prominence an issue which has lain dormant since the late 1970s—use valuation of farmland (property tax appraisals based solely on farm income). Under existing procedures, agricultural land seldom is reappraised if it remains in farm production. Use value, consequently, has not been an issue.

Appraisal practices will change, however, if annual computer reappraisal is adopted: farmland appraisals will increase and decrease proportionately to market value each year. During the last decade, farmland appraisals would have increased as dramatically as market values had there been annual computer updates. Of course, tax levies would not have risen proportinately because other properties also increased in value and tax rates likely would have fallen. Regardless, one can expect a renewed interest in use valuation if farmland market values again rise more rapidly than farm earnings and if assessments are updated annually.

However, farmers would be unlikely to opt for use-value appraisal should the Kansas Constitution be amended as set forth in Senate Concurrent Resolution No. 1619. Though use valuation is permitted in the proposed amendment, farmland so appraised would be assessed at 20 percent, rather than at the 6.0 percent assessment applied to market value. Assessment with the (20 percent) use-value alternative would for most years result in higher taxes than would 6.0 percent assessment of market value, causing farmers to reject use-value appraisal.[5]

Assessment at a higher percentage for use value than for market value was inserted,

Because adroitly conceived classifications can minimize shifts of tax burdens to farms and residences from other classes of property, a classification amendment to the Kansas Constitution may well receive favorable votes from both legislators and citizens.

perhaps, in S.C.R. 1619 because of the favorable treatment that farmland would have received had it been appraised in the early 1980s according to the "federal" technique[6] of use-value appraisal that once had been considered for Kansas.

There are, however, alternative techniques of use valuation that are preferable to the federal technique both in theory and practice. These alternatives could provide appraisals roughly equal to market value of farmland in areas where the *only* use of land is agricultural.[7] Farmland, so appraised, then might be subject to the same assessment ratio as market values. In that case, use-value appraisals could be employed as a tool for land-use planning—for instance, encouraging retention of agricultural land for agricultural purposes at the urban fringe.

V. Conclusions

Public finance economists have articulated a set of principles for the "Good Tax System." These principles, dating from the time of Adam Smith, are equity, clarity, simplicity, and economic efficiency. Recent proposals for reappraising property (S.B. 275 and S.C.R. 1619, 1983 session) promote many, but not all, of these principles.

Equity—equal taxation of equivalent properties in the same tax unit—can be obtained from statewide reappraisal and annual updates of property value. Along with equity will come significant changes in tax bills—doubling or halving will not be uncommon—as existing underassessments and overassessments are redressed in the initial year of reappraisal. Annual updates also will keep the tax base in line with economic growth and the general price level, thus ensuring that tax revenues will keep pace with the income of Kansans.

Clarity of the property tax will be enhanced by proposals for easy access to property tax information. For instance, under provisions of Senate Bill 275, a taxpayer could request information about his own as well as his neighbor's assessment simply by indicating the street address. Legal descriptions would not be required to discover assessments or taxes on any property in any county.

On the other hand, proposed revisions in the tax structure do little for economic efficiency, which requires not only current appraisals but also taxes that fall equally or neutrally on all classes of property. A tax is economically efficient if it allows buyers to respond to market prices free of distortions introduced by unequal taxes. Classification of taxes is non-neutral because it could encourage buyers to shun higher taxed properties in favor of those with lower taxes.[8]

Also, proposals for classification, rather than advancing simplicity and clarity, add complexity and obscurity to the property tax system. When assessments are some fraction of appraised market value, it becomes difficult to judge whether they accurately represent an appraisal at fair market value. For instance, with an 8.0 percent assessment ratio, an increase in assessment of $1,200 really means that the appraiser has increased the market valuation of a property by $15,000.

Full value assessment, which had been proposed by the 1978 interim legislative Committee on Assessment and Taxation and by the Kansas Department of Revenue, would remove any doubts in the taxpayer's mind about the meaning of increased appraisal. When the appraiser increases market value of a property by $15,000 and full value assessment is the rule, the taxpayer is notified of a like change in his assessed value.

While current proposals for reappraisal incorporate classified (i.e., fractional) assessments, Kansans still have an opportunity to revive full value assessment and move the state a bit closer toward the "Good Tax System."

This goal could be reached by modifying the classification amendment to the Constitution so that it allows classification of *tax rates* rather than classification of property categories.[9] Kansans could obtain, therefore, the pattern of tax burdens recommended by Senate Concurrent Resolution 1619 and yet retain the clarity of 100 percent assessment. For example, county clerks could simply levy differing rates on full value assessments instead of levying the same tax rates on properties with differing ratios,[10] thereby providing whatever differential among taxes might be politically required to gain passage of reappraisal.

Moreover, a constitutional amendment can be short and simple; it can omit any mention of specific rates or ratios. The Constitution could merely authorize classification, while the governor and legislature provide the specific tax rates or ratios for the property tax system.[11] Kansans thereby retain flexibility for both taxation and the constitutional document.

Footnotes

[1] Appraisal for *ad valorem* tax purposes is, according to Kansas statutes, the valuation of property at fair market value. Assessment is the valuation of property at some percent of appraised value. Kansas statutes (K.S.A. 79-5019-1439) specify that assessed value shall be 30 percent of appraised value. Assessed value is the figure which is subject to the property tax rate. Though assessments remain at 30 percent of appraised values, the latter are now substantially below market value because of outdated appraisals. Consequently, assessments are approximately equal to 7.0 percent of market values. If appraisals were all current, assessments would equal almost 30 percent of market value.

[2] In Figure 1, county coefficients are weighted by the market value of property within each county so that each county contributes to the composite index in proportion to the value of property represented by the coefficient. For rural property, the simple average and the weighted average yield almost identical results. For urban property, the weighted composite is below the simple average by roughly 20: in 1982 the simple average coefficient was 63.86, and the weighted average was 41.47. The reason for the lower weighted average is that coefficients of deviation are relatively low in the counties with the greatest urban wealth.

Offical Kansas figures that pool observations from all counties to calculate a single coefficient yielded a statewide urban coefficient of 56.93 in 1983. The state's rural coefficient was 58.93. The author's composite index makes allowances for differences in median assessments among the counties and, thus, yields lower coefficients than state figures.

[3] Analysis of equity is restricted to equity *within* property classifications and *within* the same taxing unit.

[4] Proposals in Senate Bill 275 would bring significant changes in the relation between the Kansas Department of Revenue and the county appraisers. How many of the proposals would become law will be determined after testimony and discussion within the legislature.

[5] Twenty percent of use value and 6.0 percent of market value were roughly equivalent to one another in 1980–82, when S.C.R. 1619 was drafted. The equivalence was due to (a) the high interest rates of that period which increased the denominator of the use-value equation and (b) the averaging technique for cash rents which depressed the numerator. These two factors combined to suppress use-value appraisals relative to market value in the early 1980s.

In 1973, a year perhaps more representative of the farmland market and interest rates than was 1981, assessments based on 20 percent of use-value appraisals would have equalled (according to U.S. Department of Agriculture data) roughly $36 per acre for Kansas cropland, while assessments based on 6.0 percent of market value would have been approximately $15. That is, use-value assessment would have been more than double market-value assessment.

If conditions in 1973 generally represent farmland markets and interest rates, then farmers will be virtually blocked from exercising the use-value alternative of S.C.R. 1619 (and similar proposals).

[6] The federal government employs use valuation to appraise farms for estate tax purposes. The use-value equation, details of which are found in Internal Revenue Code, Section 2032A(e)(7), is:

$$\text{Use Value} = \frac{\text{Five-year average of gross cash rent less property tax payments}}{\text{Five-year average interest rate for all new Federal Land Bank loans}}$$

High interest rates in the late 1970s and early 1980s were responsible for low use-value assessments.

[7] The author has analyzed the federal technique and developed an alternative to replace it: the paper will be sent on request.

[8] Before policy decisions are made on the basis of the economic efficiency criterion, one must consider tax shifting. Tax payments by the owner of a property may not truly represent the dollar burden on the owner or purchaser of a property if the tax can be shifted to others.

[9] A more open-ended amendment could allow the legislature to assign either differential rates *or* differential ratios to each classification.

[10] On request, the author will send an example of how differential tax rates can be calculated.

[11] To prevent proliferation of rate or ratio classifications, the proposed Constitutional amendment could specify the maximum number of classifications.

Appendix

Full Value Assessment and Classification of Tax Rates

Kansas can retain uniform assessment, acquire the benefits of full value (100 percent) assessment of real property, and, at the same time, obtain the results of varying assessment ratios by property classification. This can be done by varying *tax rates* by classification of property rather than varying the ratios.

This technique, because it is unfamiliar, might initially seem to create a problem in calculating tax rates. It does not. Derivation of differential tax levies requires only a few additional calculations, as shown below where the two classification techniques are compared, using ratios suggested in Senate Concurrent Resolution 1619 (1983).

If differential tax rates are levied (instead of different ratios used for assessments), taxpayers will be informed clearly of the effect of property classification.

I. Calculations with Classified Ratios

A. Derivation of Tax Base (Assessed Value)

Classification	Fair Market Value	Assessment Ratio	Assessed Value
Farms	$ 4,500	.08	$ 360
Residential	7,500	.08	600
Commercial & Indust.	2,000	.20	400
Utilities	1,500	.30	450
	$15,500		$1,810

B. Derivation of Tax Rate
Total Expenditures Financed by Property Tax = $181
Expenditures/Assessed Value = Basic Tax Rate
$181/$1,810 = .10 = 10.0% = 100 mills

C. Tax Levies
Tax on Farm = 10% × $360 = $ 36
Tax on Residential = 10% × 600 = 60
Tax on Comm. & Indust. = 10% × 400 = 40
Tax on Utilities = 10% × 450 = 45
$181

II. Calculations with Classifed Tax Rates

A. Derivation of Calculation Base

Classification	Fair Market Value	Relative Ratios	Tax Calculation Base
Farms	$4,500	8/30 = .267	$1,200
Residential	7,500	8/30 = .267	2,000
Commercial & Indust.	2,000	20/30 = .667	1,333
Utilities	1,500	30/30 = 1.00	1,500
			$6,033

B. Derivation of Tax Rates
Total Expenditures Financed by Property Taxes = $181
Expenditures/Calculations Base = Basic Tax Rate
$181/$6,033 = .03 = 3.0% = 30 mills
Farm Tax Rate = 8/30 × 3.0% = 0.80%
Residential Tax Rate = 8/30 × 3.0 = 0.80
Comm. & Indust. Tax Rate = 20/30 × 3.0 = 2.00
Utilities Tax Rate = 30/30 × 3.0 = 3.00

C. Tax Levies
Tax on Farms = 0.8% × $4,500 = $ 36
Tax on Residential = 0.8 × 7,500 = 60
Tax on Comm. & Indust. = 2.0 × 2,000 = 40
Tax on Utilities = 3.0 × 1,500 = 45
$181

Economic Conditions
The National Review

The Deficit Dilemma

Increasing attention has been concentrated lately on the question of excessive federal budgetary deficits. The issue has been brought into public focus by a prolonged disagreement between Council of Economic Advisors Chairman Martin Feldstein and other members of the Reagan administration, including Treasury Secretary Donald Regan.

The crux of the disagreement lies in Feldstein's and Regan's conflicting views concerning what impact the string of projected 170 billion dollar deficits will have on the recovery. Feldstein's position which is supported, at least to a degree, by the mainstream of the economics profession, is that deficits of this magnitude will force interest rates dangerously high which, he warns, may have devastating effects on the recovery.

His prescription calls for the deficit to be pared through a combination of spending cuts and tax increases. Feldstein is concerned that, without these measures, the recovery will be choked off, perhaps by as early as the second half of this year. Or, if the recovery does continue, he contends that it will do so in a lopsided fashion with the bulk of expansion concentrated in consumer nondurables and military spending at the expense of interest-sensitive sectors such as consumer durables and business investments in plant and equipment.

This argument, though, does not impress Secretary Regan whose position derives support from the so-called supply-side economists. This group, after having struggled to secure enactment of the Kemp-Roth tax cut package, is not sympathetic to tax increase suggestions unless they are also accompanied by guaranteed spending cuts. In addition, they believe no strong evidence supports contentions that deficits of the magnitude presently being experienced do indeed cause inflation.

In order to evaluate the merits of these respective positions, it is necessary to understand the manner in which interest rates are determined and the extent to which they may be affected by government deficits. Unfortunately, insight into these matters does not come easily, nor is there a consensus among economists on the subject, which, no doubt, partially explains the Feldstein-Regan controversy.

The standard view on the subject is that interest rates represent an opportunity cost of holding money and that interest rates will rise as money demand increases relative to its supply. This simple approach, however, ignores the impact of inflation and expectations and also gives short shrift to the fundamental role which must be played by supply-demand interplay within the credit markets themselves.

It is these latter factors which apparently form the basis for Feldstein's concern. As the economy approaches full capacity, budgetary deficits are expected to become increasingly inflationary because the demand-side pressures they involve can no longer be easily accommodated by stepped-up production. Inflation, in turn, diminishes the return on fixed obligation credit instruments for which the actual or real yield can be approximated as the nominal or coupon rate of return less the rate of inflation during the time period under consideration. Therefore, if inflation is correctly anticipated, coupon rates on debt instruments will be higher by the amount of inflation, but the real rates will be unaffected.

However, because future inflation rates cannot be known with certainty, bondholders must form expectations concerning inflation and, in addition, may attach a risk premium to the rates at which they will lend in order to compensate for the uncertain situation they face. Therefore, if investors believe that budget deficits will become inflationary, interest rates will rise, especially on longer term obligations, even before any actual inflationary pressures are apparent, as inflation adjustments and risk premiums become attached to interest rates.

The other avenue of concern for Chairman Feldstein relates to the deficit's direct effect on real interest rates. Financing its budget deficits most often puts the government in direct competition with consumer and business borrowers for the pool of available credit. Not surprisingly, Professor Feldstein fears that the credit markets will not be able to withstand the projected long-term onslaught of demand-side pressures without substantially increasing the cost of borrowing.

Treasury Secretary Regan and his supporters' position is not as easily described as Chairman Feldstein's. Aside from political considerations, it appears to hinge on three suppositions: (1) No causal link exists between deficits and high interest rates, (2) tax hikes will have much the same effect on the credit markets as will deficits, and (3) any tax increase will inevitably be accompanied, via the political gristmill, by higher levels of expenditures—sort of a Says' law of politics and, essentially, a noneconomic point.

The first of these contentions is difficult to document due to the fundamental distinction between deficit financing in periods of slack in the economy relative to an economy nearing full capacity. Only in the latter circumstance do serious economists contend that deficits have undesirable consequences, but here little prior basis exists from which to judge ongoing deficits of the magnitude presently being projected.

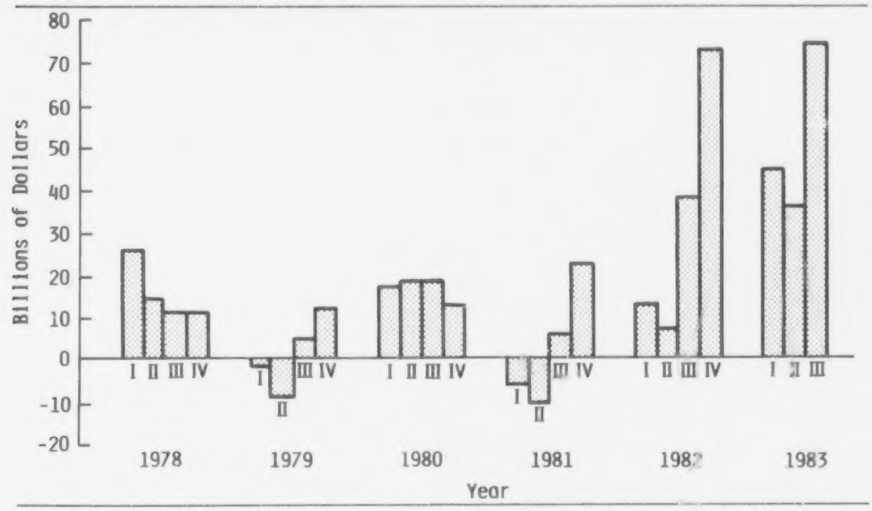
However, one description which has been developed to measure the expansionary impact of the federal budget irrespective of current business cycle conditions is what is known as the "high employment deficit." This measure indicates what the level of deficit or surplus would be given the prevailing fiscal program if the economy were at full employment. This amount of deficit is sometimes also known as the "structural deficit." The larger this measure is, the more expansionary and potentially inflationary is the federal budget.

Figure 1 illustrates recent trends in the high employment deficit. Clearly, as the figure indicates, its levels over the past five quarters have been considerably higher than any in recent experience. Moreover, high employment deficits of these orders of magnitude or even higher are expected over the next several quarters given the current fiscal package.

The second Regan argument is supply side in origin. Economists of that school argue that tax cuts would sufficiently stimulate production and savings so as to avoid a deficit problem. Although experience has demonstrated the fallacy in this contention, nonetheless the argument remains: higher taxes will cut the supply of saving to the credit markets, thus inducing upward pressure on interest rates; diminished work incentives, will cut production, thereby reducing tax revenues and making the deficit even higher.

Reconciling these conflicting positions goes well beyond mere macroeconomic theorizing because most would agree, irrespective of their individual viewpoints, that the long-term

Figure 1
Federal Budget High Employment Deficits (Negative Numbers Indicate a Surplus)



vitality of the recovery depends upon the manner in which the deficit controversy is resolved and, in turn, upon the future course of interest rates. Although sufficient evidence to support or reject either viewpoint is not likely to be available for some time, a fact which is apparent now is that present levels of interest rates are very high relative to the current low levels of inflation and to those levels predicted for the immediate future. This condition, of course, means high real interest rates, so, if Chairman Feldstein's position is correct and unless the budget changes in unforeseen ways, the interest rate conundrum could begin to take its toll on the economy as early as the second half of 1984.

Table 1 provides documentation of recent trends in certain key, short-term interest rates. It represents an update of a table which appeared nearly two years ago in this section of *KBR* (Vol. 5, No. 5). Although some quarter-to-quarter volatility is apparent in the data, they nonetheless present a consistent pattern of high real interest rates beginning in 1981 and continuing through the present.

Most economists are in agreement that high interest rates aborted the brief 1980-81 recovery and induced the 1981-82 recession, so it is little wonder that many are somewhat uneasy over their present and projected future course.

In closing this capsule analysis of deficits and interest rates, it should be noted that inflationary fears and risk premiums are reflected principally in longer term debt instruments than those detailed in Table 1. Short-term instruments are subject to only minor capital risks, so their present rate structure reflects principally tight credit market conditions. Inflationary fears and inflation-related risk premiums are present too, however, as witnessed by the somewhat ominous fact that the rates on long-term treasury securities are currently three percentage points higher than the 90-day T-bill rate.

RECENT ECONOMIC DEVELOPMENTS

The economy cooled somewhat in the fourth quarter following the exceptional 8.7 percent annualized real growth recorded during the April-September period. Nonetheless, the anticipated 4.5 percent fourth quarter growth rate still represents a solid economic performance, and, moreover, it is the type of moderate growth which many analysts feel is necessary to induce a sustained recovery. In fact, some slowdown is regarded as desirable in order to dampen any latent inflationary sparks.

The rest of the fourth quarter economic news follows much the same tenor as that describing the growth scenario: namely, thumbs up and full steam ahead for the recovery. To elaborate, unemployment continued to fall more rapidly than expected. The civilian worker jobless rate fell over the last quarter from 9.3 percent to 8.2 percent, the lowest rate since November 1981. Actual job growth was somewhat less impressive (about 100,000 new workers) than the unemployment data. The discrepancy is explained by the fact that labor force growth during the recovery has been somewhat slower than expected which, coupled with higher than anticipated GNP growth, accounts for the surprisingly sharp unemployment drop.

Consumer prices, which had crept up into the five percent range during the middle quarters of 1983, moderated during the fourth quarter with CPI-U rising 0.4 percent in October and 0.3 percent in November, providing annualized inflation rates in the four percent range.

Harbingers of further price moderation into 1984 were the series of modest increases and even declines recorded in the various producer price indexes. The finished goods component fell 0.2 percent in November after a 0.3 percent October increase, while the intermediate goods index only rose 0.3 percent and 0.1 percent, respectively, over the two months. Crude goods prices fell 0.2 percent in October and rose 0.3 percent in November.

An examination of recent developments in the nation's factories shows industrial production up 0.8 percent in both October and November and up 15.9 percent over the year ending in November. The bulk of the recent

Table 1
Real Interest Rates for Selected Series

		90-Day Treasury Bill		90-Day CD		90-Day Average Prime[2]	
Quarter	Compounded Annual Inflation Rate[1]	Nominal Rate	Real Rate	Nominal Rate	Real Rate	Nominal Rate	Real Rate
79:1	14.4%	9.3%	-5.1%	10.9%	-4.5%	11.8%	-2.6%
79:2	12.8	9.5	-3.3	10.0	-2.8	12.0	-0.8
79:3	12.8	9.1	-3.7	9.8	-3.0	15.0	2.2
79:4	15.7	10.4	-5.3	12.0	-3.7	14.9	-0.8
80:1	15.9	12.1	-3.8	13.5	-2.4	16.0	0.1
80:2	7.4	14.8	7.4	18.1	3.3	16.7	9.3
80:3	11.5	7.9	-3.6	8.7	-2.8	11.5	0.0
80:4	12.0	11.4	-0.6	12.8	0.8	15.7	3.7
81:1	8.0	15.0	7.0	17.0	9.0	19.7	11.7
81:2	11.3	14.4	3.1	15.7	4.4	18.5	7.2
81:3	9.7	14.3	4.6	17.1	7.4	20.3	10.6
81:4	4.8	14.4	9.6	16.5	11.7	17.5	12.7
82:1	3.2	11.4	8.2	13.0	9.8	16.2	13.0
82:2	9.8	12.5	2.7	14.3	4.5	16.5	6.7
82:3	4.1	9.5	5.4	11.7	7.6	15.1	11.0
82:4	0.5	7.9	7.4	9.1	8.6	12.2	11.7
83:1	0.4	8.1	7.7	8.5	8.1	10.8	10.4
83:2	5.4	8.4	3.0	8.8	3.4	10.5	5.1
83:3	5.3	9.1	3.8	9.3	4.0	10.8	5.5
83:4	4.4[3]	8.8[3]	4.4	9.4[3]	5.0	11.0	6.6

[1] Measured by the Consumer Price Index for all urban consumers, seasonally adjusted

[2] Ninety-day rates are based upon weekly averages over the period

[3] Estimated

production upsurge has been in the investment and hard goods areas.

In the meantime, the factory capacity utilization rate climbed to 79.2 percent in November, its highest level since the third quarter of 1981, but still well below rates at which inflationary bottlenecks could be expected to develop.

Highlighting some specific industrial sectors, growth in auto production was up 50 percent in December from a year ago, and, for the entire year, production at 6.8 million units was up 33 percent from 1982's level, still lagging well behind the record 8.4 million units set in 1979.

The construction industry also continued its steady improvement in recent months. New contracts were up 4.0 percent in November and were 25 percent above the year ago total. Housing starts reversed a two-month decline in November and were up 6.4 percent. Starts for 1983 are expected to total about 1.7 million which will represent a gain of about 600 thousand units from both the 1981 and 1982 totals.

OUTLOOK

The economy will enter 1984 with strong momentum following its impressive first year of recovery in 1983. First quarter growth should be relatively strong, falling somewhere in the five percent annualized range. Industries which should be particularly strong are housing and the defense-related areas. Some short-term slowdown in the consumer goods sectors is expected, however, as households ease back spending plans and attempt to raise savings levels after their holiday spending splurge.

Most forecasts call for the recovery to remain on track through 1984 but with the growth rate moderating into the four percent range as the year wears on. A leveling off in growth of this order of magnitude is characteristic of a more mature recovery.

The sharp decline in unemployment experienced during 1983 (from 10.8 to 8.2 percent) is not likely to be matched in 1984. In fact, a combination of moderating growth rates and increased labor force growth will probably prevent unemployment from declining much below the 7.5 percent range.

Inflation will likely continue to be moderate throughout 1984. Major commodity prices—those for fuel, energy, and housing—should increase only slightly during the forthcoming year, thereby insuring that overall consumer prices rise no more than 4.0-4.5 percent for the year. Risks of higher-than-expected inflation could develop if interest rates rise sharply, if the value of the dollar declines significantly, or if the economy becomes disrupted by major international upheavals.

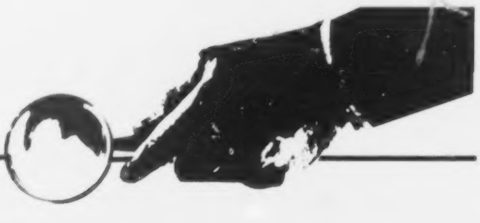
Optimism concerning the 1984 economy is centered around expectations of continued demand-side strength in most the of major spending sectors, coupled on the supply side with an expanding productive labor force which also retains surplus capacity. In particular, consumers are expressing record high levels of economic confidence which, along with their expanding purchasing power, translates into a continuation into 1984 of 1983's strong year-end spending surge. Some leveling off in consumer buying in 1984 is expected to eventually set in, though, as households seek to restore savings levels.

Business expansion is also projected to remain strong in 1984 with rising profit levels (up a projected 25 percent) providing the spending impetus. Rounding out the spending prognosis are expectations of a burgeoning public sector demand fueled by military spending and growth in state and local finances. Finally, exports, though weak through much of 1983, are expected to grow in 1984 as the world economy continues to improve and as the dollar begins to slip from its record high levels.

The Institute's high-probability forecast conforms closely to most other 1984 projections, but, as usual, economists are not in complete agreement on the economic outlook. For example, many of the so-called supply siders, buoyed by what they perceive as the economy's ebullient reaction to the Reagan economic program, are calling for additional rapid growth, perhaps upwards from 6.0-8.0 percent in the forthcoming year as the final phase of the tax cut takes hold. Less sanguine, however, are many monetarists who feel that extremely slow monetary growth during the second half of 1983 will have a stultifying effect on 1984's economy, especially during the first half. As noted previously, a concern to many is the continued pressure on credit markets and interest rates induced by a projected 170 billion dollar federal deficit. Although mindful of these concerns, the Institute's view is that the Federal Reserve will be able to keep the lid on interest rates at least through 1984 and that, if anything, a short-term moderation in credit costs may be forthcoming as the election year money supply becomes more expansionary and as inflationary fears are cooled somewhat by another year of price moderation. Furthermore, any money-induced slump during the forthcoming year is expected to be no more than a transitory downtick.

Richard Sexton
Research Economist
The Institute for Economic
and Business Research

The Kansas Economy



The General Trend of the Kansas Economy

While 1983 was a year of strong, sustained growth for the national economy, the year was one of weak growth for the Kansas economy. From November 1982 (the trough of the last national recession) to November 1983, U.S. nonfarm wage and salary employment increased 3.1. During that same period, the Kansas nonfarm wage and salary employment increased only 0.8 percent. There are two basic reasons for the relative weakness of the Kansas 1983 economic performance: the Kansas recovery began later than the national recovery by at least a quarter, and, when the Kansas recovery began, it had less initial vigor than the national rebound. Thus, the Kansas economy enters 1984 with much less momentum than the national economy.

Kansas's economic performance this past year creates a particular problem for forcasting the state's economic performance in 1984. As was pointed out in an earlier issue of *KBR* (Sexton and Glass, "Instability in the Kansas Economy," March, April-May, June 1983), the Kansas economy closely follows the national business cycle. In the past 25 years, there has been no consistent pattern of the state's leading or lagging the national business cycle. If this pattern continues into 1984 and if the national growth rate declines slightly as many "media" economists have projected, then the Kansas economy could experience essentially no growth in 1984. However, if the Kansas economy has broken its pattern with respect to the national economy, beginning with the state's lagged recovery, then it could

Table 1
Non-Farm Wage and Salary Employment (The Average of September, October, and November of Each Year in Thousands of Jobs)

Sector	1979	1983	Percentage Change (1979–1983)
Total			
U.S.	90,425	91,685	1.39
Kansas	961.6	917.5	− 4.59
Manufacturing			
U.S.	21,027	19,207	− 8.66
Kansas	199.6	163.6	−18.04
Durable Goods			
U.S.	12,760	11,285	−11.56
Kansas	130.8	98.4	−24.77
Machinery			
U.S.	4,632	4,247	− 8.31
Kansas	37.4	25.1	32.89
Transportation Equipment			
U.S.	2,062	1,854	−10.09
Kansas	53.7	42.7	−20.48
Construction			
U.S.	4,523	4,276	− 5.46
Kansas	53.4	36.6	31.46

surge through 1984, experiencing a growth rate greater than the nation's. Between these two extreme scenarios exist several moderate possibilities, and, in order to sort them out, it is necessary to review Kansas's economic performance over the past four years.

A four-year comparison by sector of the Kansas economy with the national economy reveals one glaring fact: national nonfarm employment has grown while Kansas nonfarm employment has shrunk. From 1979 to 1983, total nonfarm wage and salary employment grew 1.39 percent at the national level; it declined 4.59 percent in Kansas* (see Table 1). A casual look at the year-to-year percentage changes in total employment from 1979 to 1983 indicates that Kansas followed the U.S. pattern; however, the declines in total employment were greater in Kansas, and the increases in total employment were less (see Tables 2 and 3).

But not all of the Kansas economy shrunk over the past four years. For example, employment in the mining industry and in the service industry increased 3.4 thousand (a 23.9 percent increase) and 6.4 thousand (a 3.8 percent increase), respectively, during this same period that Kansas total nonfarm wage and salary employment declined 4.59 percent. Still, two major industrial categories experienced the sharpest declines in employment over this period, manufacturing and construction. From 1979 to 1983, 16.8 thousand jobs were lost in construction, 36.0 thousand in manufacturing. That is a total of 52.8 thousand jobs lost in these two industries while total nonfarm wage and salary employment only declined 44.1 thousand. From a different perspective, this means that the Kansas economy, *excluding* construction and manufacturing, actually grew from 1979 to 1983. Therefore, nonfarm volatility in the state economy is located in these two industries—construction and manufacturing—and, as a result, forecasting Kansas's 1984 economic performance requires close scrutiny of these two industries' recent performances and immediate futures. The rest of the Kansas nonfarm economy should not be forgotten, but, given historical trends and the present economic environment, slow, steady growth can be assumed to continue into the near future for that part of the Kansas economy.

The construction industry in Kansas is primarily affected by two factors: interest rates and the momentum of the Kansas economy. Certainly, interest rates have moderated from their 1980–81 highs, but by historical standards they are high in nominal terms and extreme in real terms (see the preceding *National Outlook* by Richard Sexton). Although the national construction picture has improved, the industry has certainly not returned to the level of performance when Carter was president. The reason that construction has not turned around in Kansas is the lack of growth in the Kansas economy. The decline in the number of nonfarm jobs means that there are fewer people demanding residential con-

Table 2
Non-Farm Wage and Salary Employment (The Average of September, October, and November of Each Year in Thousands of Jobs)

Sector	1979	1980	1981	1982	1983
Total					
U.S.	90,425	90,658	91,194	88,964	91,685
Kansas	961.6	949.7	953.8	911.5	917.5
Manufacturing					
U.S.	21,027	20,119	20,089	18,359	19,207
Kansas	199.6	186.0	186.7	156.5	163.6
Durable Goods					
U.S.	12,760	12,024	12,048	10,705	11,285
Kansas	130.8	118.4	118.1	91.9	98.4
Machinery					
U.S.	4,632	4,565	4,624	4,112	4,247
Kansas	37.4	33.5	34.3	25.3	25.1
Transportation Equipment					
U.S.	2,062	1,855	1,858	1,666	1,854
Kansas	53.7	50.3	49.7	36.8	42.7
Construction					
U.S.	4,523	4,377	4,099	3,855	4,276
Kansas	53.4	47.6	43.1	37.6	36.6

---

*Throughout the rest of this analysis, an average of the employment levels for September, October, and November will be used for comparison. This has three advantages: (1) comparing the same months of the year eliminates seasonal factors, (2) using an average of three months moderates statistical anomalies, and (3) September, October, and November of 1979 closely represent the previous peak of the U.S. economy, and September, October, and November of 1982 represent the farthest decline of the U.S. since December 1979. This three-month average will be used whether total nonfarm wage and salary employment is referred to or employment in a specific industry is used.

Table 3
Percentage Change in Non-Farm Wage and Salary Employment (Based on Averages in Table 1)

Sector	1979 to 1980	1980 to 1981	1981 to 1982	1982 to 1983
Total				
U.S.	0.26	0.59	− 2.45	3.06
Kansas	− 1.24	0.43	− 4.44	0.66
Manufacturing				
U.S.	− 4.32	−0.15	− 8.61	4.62
Kansas	− 6.81	0.38	−16.18	4.54
Durable Goods				
U.S.	− 5.77	0.20	−11.15	5.42
Kansas	− 9.48	−0.25	−22.18	7.07
Machinery				
U.S.	− 1.45	1.29	− 11.07	3.28
Kansas	−10.43	2.39	−26.24	− 0.79
Transportation Equipment				
U.S.	−10.04	0.16	− 10.33	11.28
Kansas	− 6.33	−1.19	−25.96	16.03
Construction				
U.S.	− 3.2	−6.4	− 6.0	10.9
Kansas	−10.9	−9.5	−12.8	− 2.7

struction and more slack in the economy, thereby reducing the demand for new business construction. The slack means less expansion of already existing businesses and fewer construction demands from new firms locating in Kansas. Until the Kansas economy returns to its prerecession robustness, the construction industry in Kansas will have a difficult time.

The decline in Kansas manufacturing is nearly all in the durable goods sector. From 1979 to 1983, Kansas lost 36.0 thousand manufacturing jobs, and 32.4 thousand of those lost jobs were in the durable goods sector. The two industries within the durable goods sector which account for most of this decline were machinery and transportation equipment. The transportation equipment industry in Kansas is almost solely the auto and aircraft industries. The American auto industry has been in decline since the late 1970s. However, in the past year, it has turned around, which partially explains the increase in the past year of employment in the Kansas transportation industry. The prospects for 1984 are for a continued increase in American auto sales; however, American auto sales are still expected to be substantially below the 1979 level. For Kansas, this means that sudden, dramatic surges in auto employment should not be expected in the next year.

The other major part of the Kansas transportation equipment sector, the aircraft industry, is both more important and more difficult to forecast. The aircraft industry in Kansas is more important because of its size: in 1979, its average employment was 43.7 thousand people for the whole year, and it is more difficult to analyze because it is affected by many different factors, not all of which are purely economic. The federal budget's allocations to the Pentagon for 1984 should help some of the Kansas aircraft industry; however, the forecast for civilian aircraft demand is not clear cut. There has been a turnaround in the industry in 1983, and sales have picked up. Further on the positive side, the availabilty of used aircraft has declined. Thus, it is reasonable to expect the civilian aircraft industry to continue growing in 1984. However, this growth does not mean a return to prerecession levels of production. As in the auto industry, Kansas should expect some increase in aircraft employment this year, but not a return to the 1979 level.

Of the major industries in Kansas, machinery was the hardest hit by the last recession. In 1983, there were nearly a third fewer jobs in the machinery industry than there had been in 1979, and, although the Kansas economy has improved during the past eight months, employment in the Kansas machinery industry continued to decline slightly in the past year. Nationally, the machinery industry has begun recovering over the past year from the recession, and this trend is expected to continue into 1983. Net new orders for machine tools in the first 11 months of 1983 are running 12.2 percent ahead of the 1982 pace although new orders are still well below the peak of 1979. The reason that the Kansas machinery industry has not yet begun recovering from the recession is due to the nature of the goods produced. Machinery, whether electrical or nonelectrical, is primarily an intermediate good: the demand for its product comes primarily from other firms. In Kansas, the primary demand for machinery products comes from the auto, aircraft, and agricultural sectors. Each of these sectors is expected to show moderate growth in 1984; however, none of these sectors is expected to return to the 1979 level of production. Thus, employment in the Kansas machinery industry should grow in 1984, but it will remain well below the peak experienced in 1979.

OUTLOOK

Upon putting this analysis together, it seems reasonable to expect in 1984 that:

- the auto industry will grow moderately in Kansas,
- the aircraft industry will also grow moderately in Kansas,
- moderate improvement in agriculture, coupled with moderate growth in the auto and aircraft industry, will occasion moderate improvement in the Kansas machinery industry,
- the rest of the nonfarm Kansas economy, excluding the construction industry, will continue its slow, steady growth, and
- if nothing radical happens to interest rates, then the construction industry in Kansas should improve.

In general terms, this analysis points to a moderate growth rate for Kansas in 1984, something in the 3.0–4.0 percent growth range which translates into a 1.5–2.0 percent increase in nonfarm wage and salary employment. This rise represents a growth rate for Kansas only slightly below the national estimate. In terms of the earlier discussion of the relationship between the Kansas economy and the national business cycle, it seems clear that Kansas is still closely following the national cycle. What has changed is that, in the 1970s, the Kansas economy consistently outperformed the national economy and that, in the early 1980s, the roles have been reversed.

One final remark remains to be made as a result of this analysis of the Kansas economy. Those sectors in the Kansas economy which were hurt the worst in the recent recessions will all recover to some extent in the near future. However, the major sectors of the Kansas economy—autos, aircraft, and agriculture—are not, over the long term, growth industries in respect to employment. Seemingly every year, fewer and fewer people are required in agriculture as the industry becomes more capital intensive. As well, even if production should return to the prerecession levels in the auto industry, employment will not because of increased productivity and the replacement of people by machines. Increased automation in the aircraft industry is also a certainty. For the Kansas economy to return to the strong, long-term growth path of the 1970s, new growth industries must be developed in the state.

Robert Glass
Research Assistant
The Institute for Economic and Business Research

Agriculture

1983 Summary

The 1983 grain harvest figures are becoming finalized, and they verify what has been known for some time: the combination of drought- and PIK-induced acreage reductions generated some of the lowest harvests in the past 25 years. Table 1 provides the details for both the United States and Kansas. Harvest estimates for most crops have continued to be revised downward, reflecting the drought conditions which persisted into the fall and, in isolated instances, the early onslaught of winter which prevented some late harvesting from taking place. For the most part, recent revisions have been minor, although the Kansas corn harvest is now projected to have been seven million bushels less than the estimates reported in the fall *KBR*.

Generally, the decline in the Kansas harvest corresponded closely to that for the U.S. as the percent change columns in Table 1 verify. The notable exception is wheat wherein the state's record yield limited production losses to only 3.0 percent (compared to 14.3 nationally), in spite of a 16.9 percent acreage reduction.

Some harvest reduction was needed to combat overflowing reserves, and the impact on prices, as expected, has been most favorable. Although the anticipated retrenchment of prices from their early fall peaks has taken place, they nonetheless remain considerably above their year-ago levels. Nationally, the feed grains price index (covering principally corn, soybeans, and sorghum) stood at 153 in December (1977 = 100), up 34.2 percent from last year.

However, primarily due to the strength of the wheat harvest, food grain prices have been holding relatively stable. In fact, the food grains price index in December at 144 was off 0.7 percent from last year. Livestock prices, meantime, picked up rather sharply after falling through the autumn months. The meat animals price index rose 8.3 percent in December to stand at 144, still, however, 2.0 percent below the year-ago price.

Kansas crop and livestock prices at year end, summarized in Table 2, reflect a similar set of trends. Corn prices in the Sunflower state have moderated into the $3.20 range but are still 16.8 percent above year-ago levels.

Table 2
Prices Received for Kansas Farm Products

	Dec. 15 1983	Nov. 1983	Dec. 1982	Percentage Change Last Month	Percentage Change Year Ago
Wheat, bu.	$ 3.40	$ 3.40	$ 3.49	0.0%	− 2.6%
Corn, bu.	3.20	3.25	2.74	− 1.5	16.8
Sorghum Grain, cwt.	4.70	4.80	3.94	− 2.1	23.8
Soybeans, bu.	7.30	7.75	5.29	− 5.8	38.0
All Beef Cattle, cwt.	50.80	52.30	54.80	2.9	− 7.3
Hogs, cwt.	43.80	36.40	52.90	20.3	− 17.2

The biggest gains, though, are being scored by soybeans, up 38.0 percent from a year ago. Wheat prices, unfortunately, appear mired in the $3.40 price range and are actually slightly below their year-ago levels.

As noted, livestock prices rebounded in the last month with cattle up 2.9 percent and hogs up a healthy 20.3 percent (primarily due to seasonal factors), but still well below year-ago price levels.

Nationally, the combination of lower production, higher prices, and markedly increased governmental assistance payments will act to raise farmers' cash income for 1983, perhaps into the 40-42 billion dollar range compared to 36.3 billion dollars last year and 34.7 billion in 1981. Most of this increase can be accounted for by an increase in direct government payments to about 9.0 billion dollars in 1983 from 3.5 billion in 1982. Because of the inventory drawdown caused by the reduced summer harvests, total net farm income for 1983 will end up in the 22-24 billion dollar range, very close to last year's 22.1 billion and well below the record 32.3 billion dollar figure recorded in 1979. Because of the somewhat brighter cash flow picture, farmers' financial outlook is somewhat brighter now than in the past two years. The distribution of 1983's gains, though, will be very uneven among farmers and across geographical regions with the predicament of those who faced unusually severe drought or who failed to participate in the government programs being even worse than last year.

Preliminary estimates of Kansas farm income for 1983 are still unavailable, but the Crop and Livestock Reporting Service has estimated that the value of crop production in the state (harvest plus PIK receipts) will be down about five percent from 1982. Production costs will surely have mitigated as well, though, due to the reduced amount of acreage in crops. Actual crop receipts for 1983 will depend upon the extent to which last year's harvest was marketed or placed in inventory and upon what proportion of the state's huge 1982 carryover stock found its way into the market.

Livestock receipts will apparently be little changed from last year. Overall, prices were higher relative to 1982 in the first half of the year but fell below the year-ago pace during the summer and fall months. Given the pattern of marketings maintained throughout the year, livestock receipts were probably stable to slightly higher. Production costs, of course, turned sharply higher in the second half as feed prices escalated, thereby catching livestock producers in a classic price-cost squeeze.

In total, although estimates at this time are necessarily speculative to some degree, it appears that 1983 cash receipts will be slightly below 1982's 5.8 billion dollar total and well short of the record 6.3 billion attained in 1979. Net cash income, though, may actually have increased somewhat relative to 1982.

THE OUTLOOK FOR 1984

Following their 1983 PIK-induced sabbatical, farmers are gearing up for large 1984 plantings which could produce record harvests. The reasons behind this collective decision are better price expectations for most crops and much less attractive governmental crop reduction programs relative to last year. The PIK program for 1984 will be limited to wheat, and it will pay off at only 75 percent of normal harvest compared to 95 percent last year. Wheat farmers' incentive to participate in the 1984 commodity program is further mitigated by a stiff 30 percent acreage reduc-

Table 1
Major Crop Production for United States and Kansas

	Thousands of Bu. Harvested 1982	Thousands of Bu. Harvested 1983	Percent Change	Thousands of Bu. Harvested 1982	Thousands of Bu. Harvested 1983	Percent Change
Corn Grain	8,397,332	4,259,408*	− 49.3%	140,220	75,600*	− 46.1%
Sorghum Grain	841,079	481,992*	− 42.7	207,700	120,400	− 42.0
Soybeans	2,229,486	1,517,019*	− 32.0	47,060	24,150	− 48.7
All Wheat	2,808,737	2,407,606*	− 14.3	462,000	448,200*	− 3.0
Oats	616,981	472,541	− 23.4	8,084	5,280	− 34.7

* Revised downward since previous issue of *KBR*

tion requirement. Those who do participate will be eligible for $4.45/bu. target prices. Acreage reduction requirements for feed grains will be only 10 percent, but, nonetheless, participation is expected to be down because of improved price expectations.

Preliminary information on planting intentions for spring crops has not yet become available, but information is at hand for the magnitude of winter wheat seeding. Planting data for the nation and major wheat producing states are contained in Table 3. They show that plantings for the 1984 harvest were up 2.4 million acres nationally from last year but were still nearly 1.6 million acres below the 66.5 million planted for the 1982 harvest. Kansas farmers devoted 13,500 thousand acres to wheat this year, 300 thousand more than in 1983. Until better information regarding feed grain planting intentions becomes available, a reasonable projection is that plantings will return close to their pre-PIK 1982 levels.

The price outlook in 1984 will continue to be strong for feed grains, but little immediate hope exists that wheat prices will rise beyond the $3.50-3.60 range. Feed grain prices will remain high because of a projected record 57 percent decline in world carryover stocks by the end of the 1983-84 marketing year. As such, carryover stocks coming into the 1984 harvest will be only about 7.9 percent of annual use. For the short term, inventory conditions relative to world demand will continue to govern feed grain prices, and no substantial movement other than, perhaps, a mild drift upward can be expected through the spring months.

With inventories at such low levels, the 1984 harvest and expectations concerning it have an exceptionally pivotal role in determining prices beginning with the summer months. As such, the potential for extreme price volatility exists, depending upon harvest conditions.

Improved international wheat harvests for 1983-84 have more than offset the decline in the 1983 U.S. harvest, and world output is slightly higher than last year. Consequently, production may exceed supply for the third consecutive year. Given the prospect for large 1984 harvests and only small increases in world wide consumption, the wheat price outlook is not good. In fact, it will take a domestic or international failure of some magnitude to induce prices much above their present levels for the next several months. Moreover, because the USDA loan rate for wheat has been reduced to $3.30/bu., prices during the 1984-85 marketing year could fall into that range if production continues to exceed consumption.

Table 3
Winter Wheat Plantings

	Thousands of Acres 1984	1983	Percent Change
Kansas	13,500	13,200	2.3%
Oklahoma	7,700	7,800	−1.3
Texas	7,400	7,850	−5.7
Colorado	3,900	4,000	−2.5
Nebraska	3,300	2,850	15.8
Washington	2,800	2,750	1.8
Montana	2,700	2,550	5.9
Missouri	2,350	2,200	6.8
Other States	21,270	19,303	9.2
U.S.	64,920	62,503	3.9

Turning now to the livestock sector, 1984 beef production is expected to be off 3.0-4.0 percent in 1984, due to a reduction of placements into feedlots engendered by rising feed costs. Cattle on Kansas feedlots in December were down 5.0 percent from last December and 1.5 percent from the previous months. Similar figures are being reported for the seven monthly reporting states, and, for the group in total, feedlot placements were down 6.1 percent from a year ago.

The present relatively weak price pattern for cattle has been occasioned by higher marketings through 1983 (up 3.0 percent), but supplies should soon start to tighten. As well, some demand-side improvement will be forthcoming as the overall economy continues to expand. Therefore, the price recovery which has already begun should continue, with Omaha prices for choice steers being projected to reach the upper $60's range during the summer. The overall profitability of the livestock sector will still hinge on the pattern of feed costs. If these prices decline as expected in the summer and fall months, the second half of 1984 could be quite good for ranchers and feedlot operators.

Pork producers are also liquidating stocks in response to higher feeding costs. For this reason, prices will remain low through the spring, but the recent reductions in farrowing will start to tighten supplies by the second half of the year. Consequently, prices will begin to rise. Present projections call for 1984 supplies to be down perhaps two percent with prices rising into the $45 to $49 range by the second quarter and probably going above $50 early in the second half of the year.

Kansas hog production will be down even more than nationally. The state's present inventory at 1.6 million head is the lowest total in 16 years. Furthermore, expected farrowings in Kansas for the first half of the year are down 10 percent from last year.

In sum, receipts from both crops and livestock may well be higher in 1984 compared to last year. Net cash flow will probably be reduced, though, due to higher production costs, lower prices for field crops, and reductions in direct government payments. Given that the bulk of its crop production is concentrated in wheat, agriculture in Kansas may fare somewhat poorer than in other states.

Increased production levels will spell some improvement for the nation's beleaguered agribusiness sector. However, unless profitability in the farm sector improves more dramatically than called for in this outlook, sellers of so-called big ticket items, such as machinery dealers, will continue to face hard times.

Richard Sexton
Research Economist
Institute for Economic
and Business Research

Economic Indicators

TABLE I. NATIONAL INDICATORS

INDICATORS			LATEST DATE	LATEST PERIOD	% CHANGE	% CHANGE YEAR AGO
A. INCOME MEASURES						
GROSS NATIONAL PRODUCT	BIL.'72$	(Q)	3RD	1,553.6	1.9	4.6
DISPOSABLE PERSONAL INCOME	BIL.'72$	(Q)	3RD	1,102.1	1.8	4.0
PERSONAL CONSUMPTION	BIL.'72$	(Q)	3RD	1,018.0	0.7	4.8
GROSS PRIVATE INVESTMENT	BIL.'72$	(Q)	3RD	229.4	9.1	15.8
NET EXPORT OF GOODS & SER.	BIL.'72$	(Q)	3RD	10.4	-17.1	56.7
PERSONAL SAVINGS	BIL.'72$	(Q)	3RD	115.5	26.2	-6.1
SAVINGS RATE*	%	(Q)	3RD	4.9	0.9	-0.7
B. LABOR FORCE						
CIVILIAN LABOR FORCE	MIL.	(M)	NOV.	112.0	0.2	0.9
EMPLOYED	MIL.	(M)	NOV.	102.7	0.7	3.7
UNEMPLOYED	MIL.	(M)	NOV.	9.4	-5.3	-17.5
UNEMPLOYMENT RATES* (seasonally adj.)						
ALL	%	(M)	NOV.	8.2	-0.5	-1.6
MEN	%	(M)	NOV.	7.8	-0.4	-1.3
WOMEN	%	(M)	NOV.	7.1	-0.3	-2.0
TEENS	%	(M)	NOV.	19.9	-1.7	-4.3
BLACKS	%	(M)	NOV.	17.3	-0.8	-2.9
WHITES	%	(M)	NOV.	7.3	-0.4	-2.4
C. PRODUCTION						
INDUSTRIAL PRODUCTION		(M)	NOV.	156.3	0.8	15.9
DURABLE PRODUCITON		(M)	SEP.	141.7	2.2	14.7
HOUSING STARTS**	TH.	(M)	OCT.	1,608.0	-18.5	40.8
D. PRICES						
1. CONSUMER PRICES (seasonally adj.)						
CPI-W, ALL ITEMS	1967=100	(M)	NOV.	302.9	0.1	2.8
CPI-U, ALL ITEMS	1967=100	(M)	NOV.	303.9	0.4	3.2
FOOD	1967=100	(M)	NOV.	294.3	0.1	2.2
HOUSING	1967=100	(M)	NOV.	328.1	0.5	2.5
APPAREL	1967=100	(M)	NOV.	198.5	0.1	2.7
TRANSPORTATION	1967=100	(M)	NOV.	306.4	0.2	3.5
MEDICAL	1967=100	(M)	NOV.	364.4	0.4	6.6
2. PRODUCER PRICES						
ALL COMMODITIES	1967=100	(M)	NOV.	305.6	-0.2	1.8
INDUSTRIAL COMMODITIES	1967=100	(M)	NOV.	318.3	-0.1	1.0
CRUDE MATERIALS	1967=100	(M)	NOV.	328.3	0.3	3.5
CAPITAL EQUIPMENT	1967=100	(M)	NOV.	289.6	0.0	2.3
3. AGRICULTURAL PRICES						
PRICES RECEIVED	1977=100	(M)	NOV.	135.0	0.7	5.5
PRICES PAID	1977=100	(M)	NOV.	162.0	0.6	3.8
PARITY RATIO*	1977=100	(M)	NOV.	83.3	0.1	1.2
E. BANKING AND FINANCE						
1. MONEY SUPPLY MEASURES						
M1	BIL.$	(W)	JAN.4	522.0	0.1	9.3
2. MONEY SUPPLY COMPONENTS						
CURRENCY	BIL.$	(W)	JAN.4	147.1	0.4	10.3
TOTAL CHECKABLE DEPOSITS	BIL.$	(W)	JAN.4	370.0	0.0	8.8
TOTAL TIME DEPOSITS	BIL.$	(W)	JAN.4	717.8	0.5	-18.1
3. INTEREST RATES*						
PRIME RATE	%	(W)	JAN.13	11.0	0.0	-0.5
DISCOUNT RATE	%	(W)	JAN.13	8.5	0.0	0.0
FHA HOME MORTGAGE RATE	%	(M)	NOV.	13.2	-0.2	0.1
90 DAY CD'S	%	(W)	JAN.13	9.5	-0.1	1.3
3 MONTH T-BILLS	%	(W)	JAN.13	8.9	-0.1	1.2

*NUMBERS IN PERCENT CHANGE COLUMN INDICATE ABSOLUTE CHANGE OF THE INDICATOR

TABLE II. GENERAL BUSINESS INDICATORS FOR KANSAS

INDICATORS			LATEST DATE	LATEST PERIOD	% CHANGE	% CHANGE YEAR AGO
MANUFACTURING						
AVERAGE WORK WEEK	HRS.	(M)	NOV.	39.4	-0.3	4.0
AVERAGE WEEKLY EARNINGS	HRS.	(M)	NOV.	371.2	1.1	6.9
INITIAL CLAIMS FOR UN-EMPLOYMENT INSURANCE	TH.	(M)	NOV.	14,094.0	17.4	-23.2
NEW INCORPORATIONS						
IN-STATE FOR PROFIT		(M)	SEP.	435.0	1.4	39.4
OUT-OF-STATE FOR PROFIT		(M)	SEP.	126.0	-10.6	70.3

SOURCES: RESEARCH AND ANALYSIS SECTION
DIVISION OF STAFF SERVICES
KANSAS DEPARTMENT OF HUMAN RESOURCES
KANSAS SECRETARY OF STATE

TABLE III. EMPLOYMENT AND INCOME IN KANSAS

INDUSTRY			LATEST DATE	LATEST PERIOD	% CHANGE	% CHANGE YEAR AGO
ALL INDUSTRIES	TH.	(M)	NOV.	917.9	-0.2	0.8
MANUFACTURING	TH.	(M)	NOV.	163.6	-0.4	5.7
DURABLE GOODS	TH.	(M)	NOV.	98.1	-0.9	8.4
STONE, CLAY, GLASS	TH.	(M)	NOV.	6.4	-12.3	-9.7
PRIMARY METALS	TH.	(M)	NOV.	2.6	-3.7	8.3
FABRICATED MET. PROD.	TH.	(M)	NOV.	11.2	-0.9	5.7
MACHINERY(INCL. ELEC.)	TH.	(M)	NOV.	25.2	0.4	3.3
TRANSPORTATION EQUIP.	TH.	(M)	NOV.	42.9	0.0	16.3
AIRCRAFT AND PARTS	TH.	(M)	NOV.	32.3	2.2	14.9
OTHER DURABLE GOODS	TH.	(M)	NOV.	9.8	1.0	7.7
NONDURABLE GOODS	TH.	(M)	NOV.	65.5	0.5	1.9
FOOD & KINDRED PROD.	TH.	(M)	NOV.	23.0	0.0	-3.4
MEAT PRODUCTS	TH.	(M)	NOV.	10.2	2.0	-1.0
APPAREL	TH.	(M)	NOV.	3.8	0.0	-5.0
PRINTING & PUBLISHING	TH.	(M)	NOV.	16.0	1.9	1.9
CHEMICALS	TH.	(M)	NOV.	7.6	0.0	-5.0
PETROLEUM AND COAL	TH.	(M)	NOV.	4.3	-2.3	2.4
OTHER NONDURABLE	TH.	(M)	NOV.	10.8	0.9	17.4
MINING	TH.	(M)	NOV.	17.6	-0.6	0.6
OIL & GAS EXTRACTION	TH.	(M)	NOV.	15.9	0.0	0.6
CONTRACT CONSTRUCTION	TH.	(M)	NOV.	35.8	-3.0	-4.0
TRANS, COMM, ELEC, GAS	TH.	(M)	NOV.	64.3	0.3	3.4
WHOLESALE TRADE	TH.	(M)	NOV.	65.1	-0.6	0.0
RETAIL TRADE	TH.	(M)	NOV.	163.4	0.4	0.8
FINANCE, INS., REAL EST.	TH.	(M)	NOV.	47.6	-0.2	-2.5
SERVICES	TH.	(M)	NOV.	172.9	-0.2	-0.5
FEDERAL GOVERNMENT	TH.	(M)	NOV.	25.5	0.8	1.6
STATE & LOCAL GOVERNMENT	TH.	(M)	NOV.	162.1	0.1	-1.3
PERSONAL INCOME*	MIL.$	(Q)	2ND	29,473.0	1.8	5.2

SOURCES: RESEARCH AND ANALYSIS SECTION DIVISION OF STAFF SERVICES KANSAS
DEPARTMENT OF HUMAN RESOURCES BUREAU OF ECONOMIC ANALYSIS
BUREAU OF ECONOMIC ANALYSIS, DEPARTMENT OF COMMERCE

TABLE IV. CONSUMER PRICES--KANSAS CITY
CPI FOR ALL URBAN CONSUMERS (CPI-U)

CATEGORY		LATEST DATE	LATEST PERIOD	% CHANGE	% CHANGE YEAR AGO
ALL ITEMS*	1967=100 (B)	DEC.	303.3	0.7	4.4
FOOD AND BEVERAGE	1967=100 (B)	DEC.	281.8	0.5	1.8
HOUSING	1967=100 (B)	DEC.	325.6	-0.7	3.8
APPAREL AND UPKEEP	1967=100 (B)	DEC.	216.8	1.2	5.1
TRANSPORTATION	1967=100 (B)	DEC.	293.4	1.1	4.0
MEDICAL CARE	1967=100 (B)	DEC.	386.4	2.6	10.2

*ALL PERCENT CHANGES ARE FROM TWO MONTHS PREVIOUS.

SOURCE: BUREAU OF LABOR STATISTICS

TABLE V. EMPLOYMENT SALES DATA FOR KANSAS, STATE AND AREAS

AREA			LATEST DATE	LATEST PERIOD	% CHANGE	% CHANGE YEAR AGO
KANSAS--STATEWIDE						
CIVILIAN LABOR FORCE	TH.	(M)	NOV.	1,198.6	-0.1	-1.1
EMPLOYED	TH.	(M)	NOV.	1,144.3	0.4	0.6
FARM	TH.	(M)	NOV.	66.3	-5.0	-2.2
UNEMPLOYED	TH.	(M)	NOV.	54.3	-10.5	-26.2
RATE*	%	(M)	NOV.	4.5	-0.6	-1.6
RETAIL SALES	MIL.$	(M)	OCT.	1,307.6	-4.8	2.9
WICHITA SMSA						
CIVILIAN LABOR FORCE	TH.	(M)	NOV.	219.9	0.0	-2.1
EMPLOYED	TH.	(M)	NOV.	207.1	0.6	1.6
FARM	TH.	(M)	NOV.	2.7	-3.6	0.0
UNEMPLOYED	TH.	(M)	NOV.	12.8	-8.6	-38.5
RATE*	%	(M)	NOV.	5.8	-0.6	- 3.5
RETAIL SALES	MIL.$	(M)	OCT.	254.5	-7.9	5.9
KANSAS PORTION OF KANSAS CITY SMSA						
CIVILIAN LABOR FORCE	TH.	(M)	NOV.	289.0	0.7	4.1
EMPLOYED	TH.	(M)	NOV.	278.1	1.1	5.5
FARM	TH.	(M)	NOV.	1.4	-6.7	-6.7
UNEMPLOYED	TH.	(M)	NOV.	10.9	-8.4	-21.6
RATE*	TH.	(M)	NOV.	3.8	-0.3	-1.2
RETAIL SALES	MIL.$	(M)	OCT.	239.0	-6.8	11.0
TOPEKA SMSA						
CIVILIAN LABOR FORCE	TH.	(M)	NOV.	93.0	-0.5	-1.1
EMPLOYED	TH.	(M)	NOV.	88.0	-0.6	-0.1
FARM	TH.	(M)	NOV.	1.9	-5.0	-5.0
UNEMPLOYED	TH.	(M)	NOV.	5.0	0.0	-15.3
RATE*	TH.	(M)	NOV.	5.4	0.1	-0.9
RETAIL SALES	MIL.$	(M)	OCT.	101.3	1.2	17.5
LAWRENCE SMSA						
CIVILIAN LABOR FORCE	TH.	(M)	NOV.	34.0	4.9	-0.3
EMPLOYED	TH.	(M)	NOV.	32.8	6.1	0.3
FARM	TH.	(M)	NOV.	0.9	0.0	12.5
UNEMPLOYED	TH.	(M)	NOV.	1.2	-20.0	-14.3
RATE*	TH.	(M)	NOV.	3.5	-1.1	-0.6
RETAIL SALES	MIL.$	(M)	OCT.	28.2	-9.9	9.7
RILEY COUNTY--MANHATTAN AREA						
CIVILIAN LABOR FORCE	TH.	(M)	NOV.	23.0	11.1	0.0
EMPLOYED	TH.	(M)	NOV.	22.3	11.5	0.5
FARM	TH.	(M)	NOV.	1.1	-4.3	-2.2
UNEMPLOYED	TH.	(M)	NOV.	0.7	-6.7	-6.7
RATE*	TH.	(M)	NOV.	3.1	-0.5	-0.2
RETAIL SALES	MIL.$	(M)	OCT.	18.4	-7.1	1.7
RENO COUNTY--HUTCHINSON AREA						
CIVILIAN LABOR FORCE	TH.	(M)	NOV.	31.2	4.7	-5.5
EMPLOYED	TH.	(M)	NOV.	29.5	5.4	-1.7
FARM	TH.	(M)	NOV.	1.4	-5.4	0.0
UNEMPLOYED	TH.	(M)	NOV.	1.7	-5.6	-43.3
RATE*	TH.	(M)	NOV.	5.4	-0.7	3.6
RETAIL SALES	MIL.$	(M)	OCT.	32.7	-7.6	2.5
CRAWFORD COUNTY--PITTSBURG AREA						
CIVILIAN LABOR FORCE	TH.	(M)	NOV.	16.7	3.7	-0.6
EMPLOYED	TH.	(M)	NOV.	15.8	4.6	0.6
FARM	TH.	(M)	NOV.	0.9	0.0	0.0
UNEMPLOYED	TH.	(M)	NOV.	0.8	-20.0	-27.3
RATE*	TH.	(M)	NOV.	5.0	-1.1	-1.7
RETAIL SALES	MIL.$	(M)	OCT.	13.8	-4.2	7.8
LYON COUNTY--EMPORIA AREA						
CIVILIAN LABOR FORCE	TH.	(M)	NOV.	17.8	4.1	1.1
EMPLOYED	TH.	(M)	NOV.	17.1	4.3	2.4
FARM	TH.	(M)	NOV.	0.9	0.0	0.0
UNEMPLOYED	TH.	(M)	NOV.	0.7	0.0	-22.2
RATE*	TH.	(M)	NOV.	3.9	-0.3	-1.2
RETAIL SALES	TH.	(M)	OCT.	17.8	-7.3	6.6
SALINE COUNTY--SALINA AREA						
CIVILIAN LABOR FORCE	TH.	(M)	NOV.	25.6	0.4	-1.9
EMPLOYED	TH.	(M)	NOV.	24.4	0.8	0.4
FARM	TH.	(M)	NOV.	0.7	-12.5	-12.5
UNEMPLOYED	TH.	(M)	NOV.	1.2	-7.7	-29.4
RATE*	TH.	(M)	NOV.	4.7	-0.3	-1.9
RETAIL SALES	MIL.$	(M)	OCT.	31.2	-8.5	5.4
BARTON COUNTY--GREAT BEND AREA						
CIVILIAN LABOR FORCE	TH.	(M)	NOV.	19.3	0.5	-2.0
EMPLOYED	TH.	(M)	NOV.	18.7	1.1	-0.5
FARM	TH.	(M)	NOV.	1.0	0.0	0.0
UNEMPLOYED	TH.	(M)	NOV.	0.7	0.0	-22.2
RATE*	TH.	(M)	NOV.	3.5	-0.2	-1.1
RETAIL SALES	MIL.$	(M)	OCT.	27.0	-3.9	-5.9
MONTGOMERY COUNTY--COFFEYVILLE AREA						
CIVILIAN LABOR FORCE	TH.	(M)	NOV.	19.5	0.0	-7.6
EMPLOYED	TH.	(M)	NOV.	17.9	1.1	-2.2
FARM	TH.	(M)	NOV.	0.6	-14.7	-14.7
UNEMPLOYED	TH.	(M)	NOV.	1.6	-11.1	-42.9
RATE*	TH.	(M)	NOV.	8.0	-1.0	-5.4
RETAIL SALES	MIL.$	(M)	OCT.	18.3	-3.2	6.4

*ALL RATE CHANGES INDICATE ABSOLUTE CHANGES INSTEAD OF PERCENT

NOTE: ALL RETAIL SALES FIGURES ARE MONTHLY AVERAGES FOR THE PRIOR THREE MONTHS

SOURCES: RESEARCH AND ANALYSIS SECTION
DIVISION OF STAFF SERVICES
KANSAS DEPARTMENT OF HUMAN RESOURCES

TAX RESEARCH SECTION
KANSAS DEPARTMENT OF REVENUE

TABLE VI. RETAIL SALES SUBJECT TO SALES TAX BY BUSINESS CLASSIFICATION*

BUSINESS CLASSIFICATION			LATEST DATE	LATEST PERIOD	% CHANGE	% CHANGE YEAR AGO
APPAREL	MIL.$	(M)	OCT.	34.9	-4.6	7.1
AUTOMOTIVE	MIL.$	(M)	OCT.	255.2	-5.9	17.5
FOOD	MIL.$	(M)	OCT.	314.5	-11.4	5.7
FURNITURE	MIL.$	(M)	OCT.	55.4	9.1	17.4
GENERAL MERCHANDISE	MIL.$	(M)	OCT.	173.1	-11.6	1.4
LUMBER & BUILDING MATERIALS	MIL.$	(M)	OCT.	115.4	26.1	20.5
PROF. & PERSONAL SERVICE	MIL.$	(M)	OCT.	66.5	4.2	13.1
PUBLIC UTILITIES	MIL.$	(M)	OCT.	81.0	15.2	21.8
UNCLASSIFIED	MIL.$	(M)	OCT.	110.1	-6.9	-3.8
FARM AND GARDEN PRODUCTS	MIL.$	(M)	OCT.	1.3	18.2	18.2
MANUFACTURING & TRADING	MIL.$	(M)	OCT.	93.7	17.0	12.5
MISCELLANEOUS	MIL.$	(M)	OCT.	6.4	-83.2	36.2
TOTAL	MIL.$	(M)	OCT.	1307.6	-4.8	10.0

*ALL FIGURES ARE THE MONTHLY AVERAGES FOR THE PRIOR THREE MONTHS.

SOURCES: TAX RESEARCH SECTION
KANSAS DEPARTMENT OF REVENUE

TABLE VII. KANSAS AGRICULTURAL INDICATORS

INDICATORS		LATEST DATE	LATEST PERIOD	% CHANGE	% CHANGE YEAR AGO
PRICES RECEIVED					
ALL FARM PRODUCTS	1967=100 (M)	NOV.	130.0	0.0	-3.1
ALL CROPS	1967=100 (M)	NOV.	137.0	-0.7	-13.2
WHEAT	$/BU. (M)	NOV.	3.4	-0.6	0.6
SORGHUM GRAIN	$/CWT. (M)	NOV.	4.9	-3.5	28.3
CORN	$/BU. (M)	NOV.	3.3	0.4	27.4
SOYBEANS	$/BU. (M)	NOV.	7.9	-4.2	51.4
ALL HAY	$/TON (M)	NOV.	80.0	0.0	-17.8
LIVESTOCK AND PRODUCTS	1967=100 (M)	NOV.	126.0	1.6	-2.3
ALL BEEF CATTLE	$/CWT. (M)	NOV.	53.1	3.9	0.6
STEERS AND HEIFERS	$/CWT. (M)	NOV.	55.2	3.6	-4.3
CALVES	$/CWT. (M)	NOV.	61.5	1.8	1.0
HOGS	$/CWT. (M)	NOV.	36.4	-7.8	-17.6
MILK	$/CWT. (M)	NOV.	14.3	1.4	0.0
PRICES PAID					
HOG CONC. (38%-42%)	$/CWT. (M)	NOV.	16.2	-0.6	20.0
BEEF CATTLE CONC. (32%-36%)	$/CWT. (M)	NOV.	13.0	5.7	38.2
MILK/FEED PRICE RATIO	(M)	NOV.	1.2	-0.8	-20.0

SOURCES: FARM FINANCE, KCLRS — LIVESTOCK ON FEED, KCLRS

CROPS, KCLRS — BUREAU OF ECONOMIC ANALYSIS

TABLE VIII. BANKING AND FINANCIAL ACTIVITY IN KANSAS*

AREA		LATEST DATE	LATEST PERIOD	% CHANGE	% CHANGE YEAR AGO
AGGREGATED STATEWIDE DATA					
STATEWIDE					
TOTAL LOANS	MIL.$ (Q)	1ST	8,953.4	-7.3	-10.1
TOTAL DEPOSITS	MIL.$ (Q)	1ST	15,449.6	-6.6	2.9
DEMAND DEPOSITS	MIL.$ (Q)	1ST	3,011.2	-18.9	-8.8
TIME AND SAVINGS	MIL.$ (Q)	1ST	12,434.1	-3.0	8.6
KANSAS CITY, KANSAS					
TOTAL LOANS	MIL.$ (Q)	1ST	1,466.1	-7.8	4.1
REAL ESTATE	MIL.$ (Q)	1ST	336.8	-2.9	7.2
COMMERCIAL & INDUSTRIAL	MIL.$ (Q)	1ST	431.4	-1.7	13.7
CONSUMER	MIL.$ (Q)	1ST	351.8	-12.4	-4.4
TOTAL DEPOSITS	MIL.$ (Q)	1ST	2,295.5	-8.8	8.2
DEMAND DEPOSITS	MIL.$ (Q)	1ST	433.0	-19.9	-8.9
TIME AND SAVINGS	MIL.$ (Q)	1ST	1,862.5	-5.9	5.0
TOPEKA					
TOTAL LOANS	MIL.$ (Q)	1ST	621.8	0.5	3.6
REAL ESTATE	MIL.$ (Q)	1ST	144.8	-0.4	5.9
COMMERCIAL & INDUSTRIAL	MIL.$ (Q)	1ST	263.1	8.7	12.9
CONSUMER	MIL.$ (Q)	1ST	118.6	-5.2	-5.0
TOTAL DEPOSITS	MIL.$ (Q)	1ST	1,008.5	1.4	4.7
DEMAND DEPOSITS	MIL.$ (Q)	1ST	260.8	-7.2	2.8
TIME AND SAVINGS	MIL.$ (Q)	1ST	747.7	0.8	5.4
WICHITA					
TOTAL LOANS	MIL.$ (Q)	1ST	1,556.1	-1.7	5.4
REAL ESTATE	MIL.$ (Q)	1ST	350.1	3.2	8.6
COMMERCIAL & INDUSTRIAL	MIL.$ (Q)	1ST	682.8	-2.1	15.4
CONSUMER	MIL.$ (Q)	1ST	351.6	-4.1	-0.6
TOTAL DEPOSITS	MIL.$ (Q)	1ST	2,686.6	-0.2	14.6
DEMAND DEPOSITS	MIL.$ (Q)	1ST	749.9	-9.3	-1.2
TIME AND SAVINGS	MIL.$ (Q)	1ST	1,928.8	3.4	21.7

*This table includes data for all those commercial banks in Kansas required to report transactions to the Federal Reserve or the FDIC.

TABLE IX. BANKING AND FINANCIAL ACTIVITY IN KANSAS

AREA		LATEST DATE	LATEST PERIOD	% CHANGE	% CHANGE YEAR AGO
MEMBER COMMERCIAL BANKS					
STATEWIDE					
TOTAL DEPOSITS	MIL.$ (M)	NOV.	23,338.0	0.2	15.3
TOTAL CHECKABLE	MIL.$ (M)	NOV.	4,917.0	-0.4	3.7
DEMAND DEPOSITS	MIL.$ (M)	NOV.	3,066.0	-1.3	-6.0
OTHER CHECKABLE	MIL.$ (M)	NOV.	1,851.0	1.4	25.3
SMALL TIME AND SAVINGS	MIL.$ (M)	NOV.	15,784.0	0.5	23.0
LARGE TIME	MIL.$ (M)	NOV.	2,637.0	-0.4	-2.4
AREA					
KANSAS CITY, KANSAS					
TOTAL LOANS	MIL.$ (M)	NOV.	237.6	3.8	19.6
REAL ESTATE	MIL.$ (M)	NOV.	45.1	20.4	27.8
COMMERCIAL & INDUSTRIAL	MIL.$ (M)	NOV.	80.5	2.9	32.7
CONSUMER	MIL.$ (M)	NOV.	42.5	3.0	7.1
TOTAL DEPOSITS	MIL.$ (M)	NOV.	361.0	0.1	5.3
DEMAND DEPOSITS	MIL.$ (M)	NOV.	97.8	-2.6	-3.2
TIME AND SAVINGS	MIL.$ (M)	NOV.	243.2	1.2	7.3
TOPEKA*					
TOTAL LOANS	MIL.$ (M)	NOV.	332.7	1.1	19.3
REAL ESTATE	MIL.$ (M)	NOV.	[illegible]	2.9	3.0
COMMERCIAL & INDUSTRIAL	MIL.$ (M)	NOV.	[illegible]	-2.6	31.0
CONSUMER	MIL.$ (M)	NOV.	53.4	0.4	8.9
TOTAL DEPOSITS	MIL.$ (M)	NOV.	471.0	-1.9	14.0
DEMAND DEPOSITS	MIL.$ (M)	NOV.	[illegible]	-5.2	-2.6
TIME AND SAVINGS	MIL.$ (M)	NOV.	295.4	-0.5	24.0
WICHITA*					
TOTAL LOANS	MIL.$ (M)	NOV.	949.9	1.1	15.4
REAL ESTATE	MIL.$ (M)	NOV.	136.0	-4.0	20.0
COMMERCIAL & INDUSTRIAL	MIL.$ (M)	NOV.	451.5	-2.9	20.9
CONSUMER	MIL.$ (M)	NOV.	143.0	3.3	12.2
TOTAL DEPOSITS	MIL.$ (M)	NOV.	1,407.3	-0.8	17.3
DEMAND DEPOSITS	MIL.$ (M)	NOV.	435.3	-4.1	-5.1
TIME AND SAVINGS	MIL.$ (M)	NOV.	838.2	0.5	24.2
SAVINGS AND LOANS--STATEWIDE					
LOANS MADE	MIL.$ (M)	NOV.	104.0	-3.0	136.4
NET GAIN IN SAVINGS**	MIL.$ (M)	NOV.	9.2	-22.8	---
SAVINGS AND LOANS--CITIES					
KANSAS CITY, KANSAS					
LOANS MADE	MIL.$ (M)	NOV.	17.6	0.0	246.9
NET GAIN IN SAVINGS**	MIL.$ (M)	NOV.	-10.9	---	---
TOPEKA					
LOANS MADE	MIL.$ (M)	NOV.	24.4	-6.6	188.0
NET GAIN IN SAVINGS**	MIL.$ (M)	NOV.	1.1	-15.5	---
WICHITA					
LOANS MADE	MIL.$ (M)	NOV.	18.8	22.6	100.0
NET GAIN IN SAVINGS**	MIL.$ (M)	NOV.	11.4	---	---

*ONLY LARGE COMMERCIAL BANKS ARE INCLUDED.

**NUMBERS IN PERCENT CHANGE COLUMNS INDICATE ABSOLUTE CHANGE.

The University of Kansas
Kansas Business Review
Winter 1984, Vol. 7, No. 2

Published quarterly by the University
of Kansas, The Institute for Economic
and Business Research, Lawrence, Kansas 66045

U.S. Postage
PAID

BEST AVAILABLE COPY

7/7AV U7095 1 A

Vol. 7 No. 3
Spring 1984

KANSAS BUSINESS REVIEW

In this Issue:

Economic Aspects of Oil Exploration in Kansas

David Collins Colleen Eck

Assesing the Impacts of International Competition Upon the Kansas Labor Market: An Exploratory Analysis and Review of the Available Data

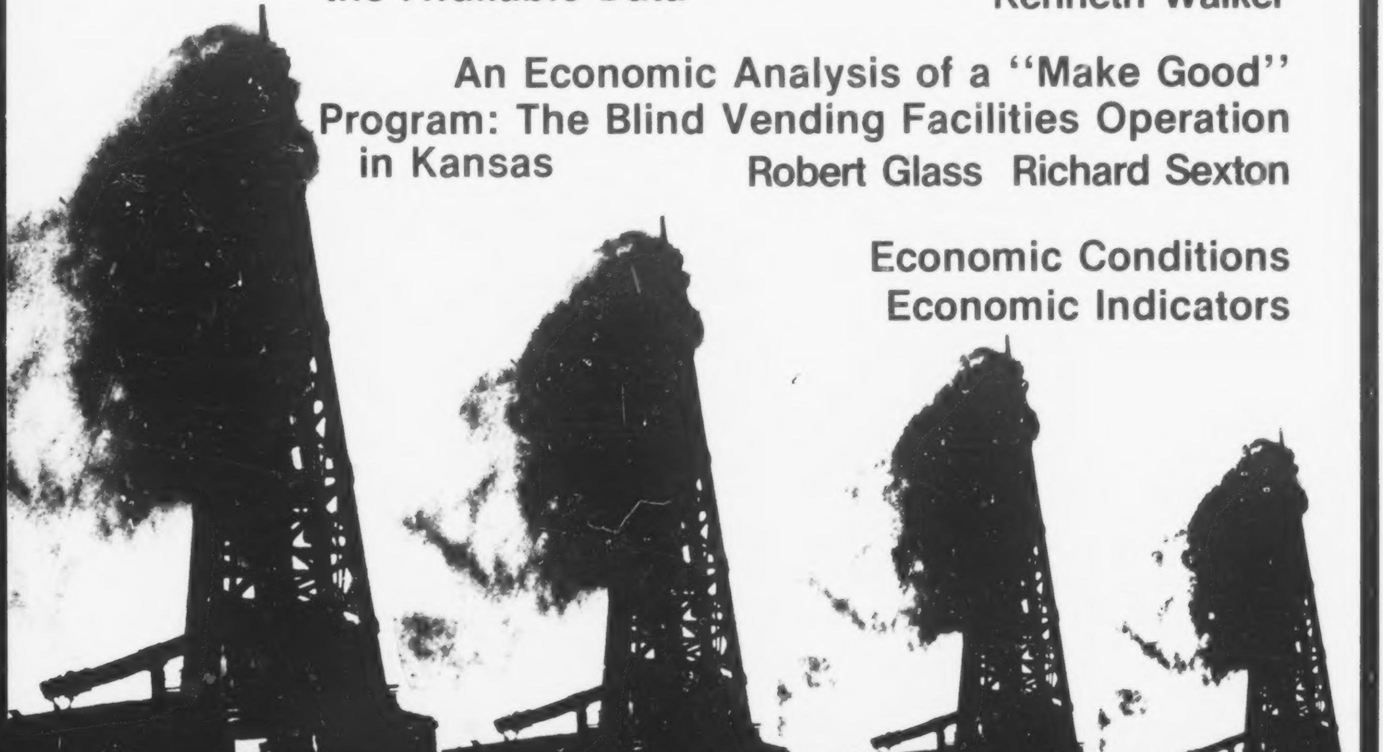
Kenneth Walker

An Economic Analysis of a "Make Good" Program: The Blind Vending Facilities Operation in Kansas

Robert Glass Richard Sexton

Economic Conditions

Economic Indicators



Institute for Economic and Business Research, The University of Kansas

KANSAS BUSINESS REVIEW

Spring 1984
Vol. 7, No. 3

In This Issue

	Page
Economic Aspects of Oil Exploration In Kansas David Collins Colleen Eck	1
Assessing the Impacts of International Competition Upon the Kansas Labor Market: An Exploratory Analysis and Review of the Available Data Kenneth Walker	8
An Economic Analysis of a "Make Good" Program: The Blind Vending Facilities Operation in Kansas Robert Glass Richard Sexton	16
Research Note	
Federal Expenditures in Fiscal Year 1983	20
Economic Conditions	
The National Review	22
The Kansas Economy	24
Economic Indicators	28

A Note to Our Readers

Beginning with the next issue, *Kansas Business Review (KBR)* will regularly feature research notes and articles emanating from the Small Business Development Center at the University of Kansas. This cooperative association between the Center and *KBR* will serve the purpose of establishing a forum for presenting research findings on subjects directly relevant to the Kansas small business man and woman.

Advisory Board of the Institute for Economic and Business Research: Mr. Edward Bruske, Executive Vice President, Kansas Association for Commerce and Industry; Executive Vice Chancellor Robert Cobb; Vice Chancellor Frances Horowitz; Professor Anthony Redwood, Director, Institute for Economic and Business Research; Mr. Charles J. Schwartz, Secretary, Kansas Department of Economic Development; Dean John O. Tollefson, School of Business; Professor Thomas J. Weiss, Chairman, Department of Economics.

Editorial Staff: Professor Anthony Redwood, Director; Michael Valk, Editor; Richard Sexton, Research Economist.

Kansas Business Review (KBR) is published four times a year. *KBR* is published by the Institute for Economic and Business Research, 317 Raymond Nichols Hall, The University of Kansas, Lawrence, Kansas 66045. It is designed by the Division of Publications, Office of University Relations.

Manuscripts for publication in *Kansas Business Review* are solicited from readers and should be sent to the editors for consideration.

Opinions expressed in the articles are those of the author(s) and do not necessarily reflect those of The University of Kansas.

CALL FOR PAPERS

The purpose of *Kansas Business Review* is to provide a forum for the dissemination of research studies and reports in the field of economics and business that would be of special interest and relevance to business persons, public officials, and academicians in Kansas and the Plains Region.

The Editorial Review Board welcomes original manuscripts, studies, and research notes from academicians and other persons in any area of economics, business, and business administration. All submissions will be reviewed initially by the editorial staff and, when judged appropriate, will be sent to referees who are knowledgeable about the content.

Manuscripts for consideration should be typed, double spaced, and submitted in triplicate. In general, length should not exceed 3,000 words. Authors are reminded of the combined scholarly-practitioner orientation of *Kansas Business Review*, which necessitates the contents being in a form readable by that audience. Accordingly, complex statistical material (when necessary for inclusion) should be included in appendix form.

Submit manuscripts to: Editor, *Kansas Business Review*, The Institute for Economic and Business Research, 319 Raymond Nichols Hall, The University of Kansas, Lawrence, Kansas 66045.

Economic Aspects of Oil Exploration in Kansas

David Collins

Colleen Eck

Dr. Collins is an Assistant Scientist with the Advanced Projects Section of the Kansas Geological Survey, where he is involved in research on discovery process models of the oil and gas industries and the estimation of regional exploration potentials for mineral resources. Colleen Eck is an Honors Program student in Economics and Political Science at the University of Kansas.

Introduction

The oil and gas industry in Kansas has been the focus of much political bickering in recent years, particularly so with the debate over the need for a severance tax. Throughout that process, which eventually led to the passage of the 1983 severance tax bill, there were highly conflicting claims presented regarding the response of the industry to such a tax. This study attempts to provide some relatively simple explanations of the nature of oil exploration as an economic venture as well as some indication of the way in which investment in oil exploration responds to changes in economic incentives.

The key finding of this study, supported by data covering the past 35 years, is that the level of activity involved in development of new production of crude oil and natural gas resources in Kansas is highly responsive to the expected profitability of oil and gas development relative to other investment opportunities. A one dollar per-barrel increase in production taxes on crude oil would result in the loss of approximately ten active drill rigs in the state. Higher interest rates triggered by federal monetary or fiscal policies could also trigger sharp drops in the search for oil and gas resources in Kansas. The study also gives evidence of the continuing decline in the average size of remaining undiscovered fields throughout Kansas and the resulting negative impacts on exploration activity.

I. Models Relating to Oil Exploration

Economic theorists have long described oil production in the context of models of exhaustible (nonrenewable) resource production. A central proposition of these models has been that the rate of depletion of an exhaustible resource is positively related to the rate of interest. The classic paper of Hotelling (1931) was the first study to firmly establish this proposition in the literature and to associate it with oil production. The durability of this proposition and its continued prominence in recent economic literature is reviewed by Farzin (1982) in a paper which is unique in its criticism of the conventional wisdom. Using a simple resource model in which the technologies of resource extraction and substitute production are explicitly formulated as cost functions, Farzin shows that the dominant effect of a decrease in interest rates may be the faster rates of extraction encouraged by the resulting reduction of unit production costs—an effect completely neglected in previous literature. The conventional proposition is correct, Farzin argues, only if the resource extraction occurs in a context which matches the restrictive assumptions of traditional models.

Although the model presented by Farzin considered resource production without exploration activities, the inclusion of such activities would reinforce the depletion incentive effect of lower interest rates in his model to the extent that lower interest rates encourage investment in exploration and, hence, increase the long-run resource availability. These effects are, in fact, present in Farzin's model if the substitute technologies which he models are taken to represent production from new oil fields as a substitute for production from existing fields. The model and empirical results to be presented in this paper give support to the ideas that lower interest rates do indeed encourage more rapid exploitation of exhaustible resources such as crude oil and natural gas and that these effects dominate the "conservation effect" of lower interest rates presented in most of the resource economics literature.

The view of oil as an exhaustible resource was encouraged by consideration of the nature of production from individual wells, leases, or fields. Once discovered, the oil-in-place for an individual field can be fairly clearly established. Initial estimates may be modified as additional information is obtained from development drilling, and economic factors may influence the percentage recovered, but the total production potential is essentially limited by the finite quantity of oil-in-place. Production causes exhaustion of that potential supply. Research by economists relating to the exploitation of crude oil or natural gas resources traditionally has focused on this type of problem (production from a fixed stock of known resources-in-place) with little consideration of the relationship which exists between exploration, production, and the stock of known resources. Only recently has the possibility of renewal of "exhaustible" resource stocks received attention in the professional literature (Fourgeaud, Lenclud, and Michel, 1982). Crude oil or natural gas production is one phase of an extended cycle of stock depletions and renewals. Production occurs from, and depletes, the developed stock of known resources, yet this stock of resources can be renewed through drilling. Development drilling also extends the production area of known deposits. Exploration drilling, when successful, discovers previously unknown deposits. These discoveries renew the stock of known resources while at the same time depleting the stock of remaining unknown deposits.

Ramsey (1980) has characterized a firm's decisions regarding oil exploration in terms of the distribution of total activity among a variety of feasible opportunities, each having a different combination of discovery probabilities and expected discovery values. Implicit in this process is an evaluation of regional variations in discovery rates as a function of local exploration densities. As described by Ramsey, oil exploration firms engage in a continual process of evaluating alternative prospects. Selection of drilling targets involves determining which of those prospects are not inferior (having both higher

New production of crude oil and natural gas resources in Kansas is highly responsive to the expected profitability of oil and gas development relative to other investment opportunities.

risk and lower expected value of discovery) to other prospects.

A critical element in Ramsey's explanation of firm behavior in the exploration for oil is the expected number and size distribution of new discoveries. Arps and Roberts (1958) and Drew, Schuenemeyer, and Root (1980) present models of the discovery process which predict the size and number of new discoveries as a function of the number of new wells drilled. These models are designed for application to individual geologic provinces or basins, where discoveries are from the same producing horizon.

Arps and Roberts developed a model in which the fraction of targets which remain undiscovered in a given size class declines exponentially with cumulative drilling. The fraction of targets already discovered from the given size class will be equal to one minus the exponentially declining fraction of targets undiscovered. Their model can thus be expressed as:

$$f_a(w) = 1 - e^{-\text{[illegible]}}$$

The term on the left side of the equation, $f_a(w)$, represents the fraction of deposits in the given size class, a, found after drilling the cumulative number of wells, w. The last term on the right side of the equation is the exponentially declining function representing the fraction of targets which remain undiscovered. For all size classes, this fraction declines as the cumulative number of wells, w, increases. The rate of decline will differ between size classes because of class differences in the projected surface area of fields, A, and differences in efficiency of the discovery process, c. In general, fields with more oil or gas will have larger surface areas and be discovered with greater efficiency than will smaller fields. Therefore, as drilling progresses, the fraction of undiscovered fields will decline much more rapidly for large fields than for small fields.

Drew, Schuenemeyer, and Root model the fraction of undiscovered deposits in a given size class as a power of the fraction of the basin area that is unexplored. This can be expressed in equation form as:

$$1 - f_a(w) = (1 - E/B)^c,$$

where the second term on the left side of the equation, $f_a(w)$, has the same meaning as in the model of Arps and Roberts. The left side of the equation is, thus, the fraction of undiscovered deposits in size class a. The value E, on the right, is the area within the basin which has been exhausted of discovery potential relative to the given size class, while the value B represents the effective basin area. The term $(1 - E/B)$ is, therefore, the fraction of the basin area which remains unexplored. The exponent, c, in the equation is the efficiency of exploration for the given size class. The area, E, which has been exhausted of discovery potential is determined using the concept of the area of influence of a drill hole (Singer and Drew, 1976; Singer, 1976). This concept is used to measure the probability that a field of the selected size could be centered at different locations in the basin without being detected by the existing array of drill holes. The value of E will depend upon the size and shape of the targets and upon the relative positions of the drill holes. In general, fields in larger size classes will have larger values of E associated with any given array of drill holes as well as higher values of discovery efficiency, c. The fraction of undiscovered fields remaining will, therefore, decline more rapidly for large fields than for small fields, as in the model of Arps and Roberts.

A study of field discoveries within a large area of northwest Kansas by Collins (1983) provides supporting empirical evidence of the relation between increased drilling densities and the resulting decline in the average size of additional discoveries. All of these results suggest that, with continued exploration in a region, increasing economic incentives will be necessary to achieve the same intensity of exploration activity. The importance of this characteristic of the discovery process will be emphasized by the results obtained in this study.

II. Drilling Activity in the Kansas Oil and Gas Industry

Crude oil or natural gas production are economic activities which offer somewhat unusual opportunities to the analyst. Unlike many industries in which records of entry or attempted entry into the industry are difficult if not impossible to locate, the oil and gas industry (along with a wide variety of other private and public agencies) has kept a long standing and detailed record of entry into the industry. Not only do detailed records exist of successful attempts to begin production of these commodities, but there is an almost equally complete record of failures at attempted entry; in either case, to get into the business of producing these commodities, it is necessary to drill a well. This study contends that drilling activity is best considered as an attempt to enter the economic activity of crude oil or natural gas production. A producing well results when there is a successful entry attempt; a dry hole indicates a failure to obtain entry.

In Kansas, drillers have been required for many years to file intents-to-drill with the Kansas Corporation Commission (KCC) and to provide the Commission with completion reports after wells are drilled. The KCC also maintains production reports from all producing leases in Kansas. Completion records, drillers logs, and other data relating to oil and gas wells in Kansas are also maintained by the Kansas Geological Survey at the University of Kansas and at the Survey's Well Sample Library in Wichita. In addition to these and many other governmental records of industry activity, there are a variety of reporting services in the private sector relating to drilling, production, shipment, and refining or processing activities in the industry. The rotary rig count of the Hughes Tool Division, Hughes Tool Company, is reported weekly in *The Oil and Gas Journal*. This report provides a count of rotary drill rigs actively drilling at the beginning of each week. Other tool companies also maintain surveys of rig activity and availability. For example, the Reed Rock Bit Company conducts a census of the number of existing rigs in August of each year. The Hughes rig count was used in this study because it reflects actual rig activity, excluding idle rigs.

The existing distribution of known oil and gas fields in Kansas is shown in Figures 1 and 2 (Kansas Geological Survey, 1983). Figure 1 shows the distribution of oil fields, including those with associated natural gas. Locations of natural gas fields are shown in Figure 2. It is not surprising that the pattern of oil and gas field locations reflects the pattern of most highly concentrated drilling in the search for oil and gas.

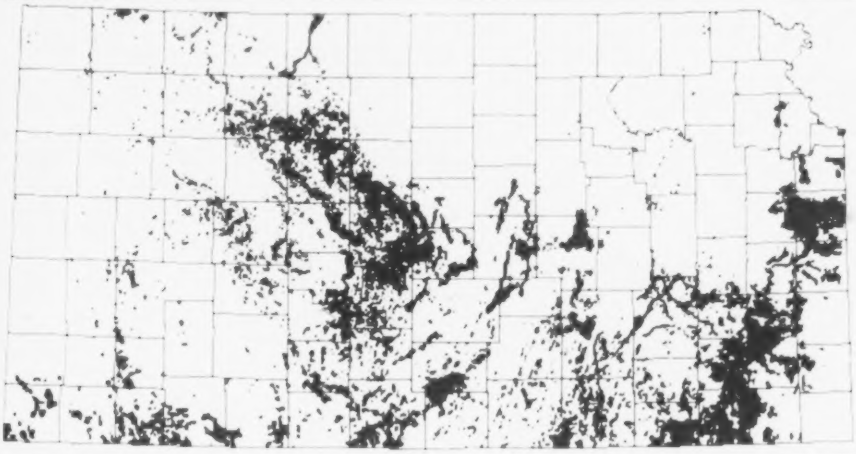
Figure 3 demonstrates the tremendous influence which price increases following the 1973 OPEC embargo and subsequent OPEC price negotiations have had on the drilling industry in Kansas. While recent history would suggest the price of crude oil as an excellent guide to industry behavior, a longer view of drilling in Kansas indicates that price alone is insufficient to explain the cycles which have occurred. Figure 4 represents drilling in relation to the domestic oil prices for the period from 1949 to 1983. There have been two major booms in drilling activity during this time period, but only one major shift in oil prices.

III. The Determinants of Drilling Activity in Kansas

Eck (1983) investigated the response, covering the time period 1970-1982, of drilling activity to the discounted value of the oil discovered. The Hughes rig count was used as an index of drilling activity. The discounted value of oil discovered was defined as the ratio between oil price and interest rate. The oil price used in that study was the average domestic wellhead price of crude oil from January 1970 to June 1982, while the interest rate was the average monthly rate on five-year constant maturity United States Treasury Bonds. Estimating the rotary drill rig count at time t, D_t, as a function of the ratio of price and interest rate six months prior to time t, P_{t-6}/I_{t-6}, Eck used the following linear model:

$$D_t = a + b(P_{t-6}/I_{t-6}) + e_t, \qquad (1)$$

Figure 1
Kansas Oil Field Locations (Including Oil Fields with Associated Natural Gas)



where t is the month of observation of drill rig activity and e is the estimation error.[1] Price is measured in dollars per barrel, and the interest rate is measured in percent.

Ordinary least squares estimation of the coefficients produced the following results:

$$a = -24.42,$$
$$b = 88.85, \qquad (1C)$$
$$R^2 = 0.89, \; F_{1,148} = 1186.$$

A good fit was obtained as indicated by the R^2 value, which measures the proportion of the variation in drilling activity, D, "explained" by equation (1). The F statistic is used to reject the hypothesis that none of the explanatory variables in a regression model help to explain the variation of the dependent variable about its mean (Pindyck and Rubinfeld, 1976). Rejection of the hypothesis occurs with a preselected probability of error (the significance level) when the value of the F statistic exceeds the critical value obtained from published tables for the selected significance level. Evaluation of the residuals or errors between observed rig counts and those determined from the model using the estimated coefficients indicates significant serial correlation of the errors. This finding, in turn, indicates that the model may not explain as much of the variation in drilling activity as indicated by the R^2 value and that the F statistic may overstate the validity of the model structure.[2]

Eck's model is adapted from necessary conditions for optimal exploration rates derived in a production-exploration model with a two-year planning horizon. An alternative model, with drilling rates expressed as a linear function of just the wellhead oil price, provided an equally good fit of the data ($R^2 = 0.82$) from 1970 to 1982. When the data are extended to the longer period from 1949 to 1983, wellhead price loses all of its power ($R^2 = 0.07$, F < critical value) to explain drilling activity (see Figure 4). The ratio of price and interest rate, however, maintained a relatively higher correlation with drilling activity over the extended period as illlustrated graphically in Figure 5.

The model in equation (1) has been reestimated for this study using annual data for the period 1949 to 1983. Because the annual data represent averages of monthly data over a time period longer than the lag used in (1), the model is tested here without a lag:

$$D_t = a + b(P_t/I_t) + e_t, \qquad (1')$$

where now t indicates the year of observation. The results of a least squares regression are as follows:

$$a = 38.60$$
$$b = 56.88 \qquad (1'C)$$
$$R^2 = 0.34, \; F_{1,33} = 16.81.$$

Although better than the fit obtained using only price as an explanatory variable, the fit is not good, with only about one third of the rotary rig count variation explained by the model. This outcome might be expected since more highly aggregated data covering a longer time period were applied to the model. The estimated residuals again show a high degree of serial correlation.

In an attempt to improve upon Eck's initial results, this study adopts a different view of drilling activity and its relation to oil prices and interest rates. It considers drilling as an attempt to enter the economic activity of resource extraction. The proposed hypothesis is that the rate of attempted entry into oil and gas production is a function of the net expected profitability of production resulting from drilling relative to the opportunity cost of the drilling investment.

The net expected profitability of production resulting from drilling can be expressed as:

$$(PQ - C)/C,$$

where

P = wellhead price of oil,
Q = expected additional production per unit of drilling, and
C = cost per unit of drilling.

The opportunity cost of investment in drilling is the foregone return available in other investments. The interest rate, I, is taken as one possible measure of this cost. Without lags between observations of relative profitability and drilling rates, the resulting regression model is:

$$D_t = a + b[((P_tQ_t - C_t)/C_t)/I_t] \qquad (2)$$

or

Figure 2
Kansas Natural Gas Field Locations

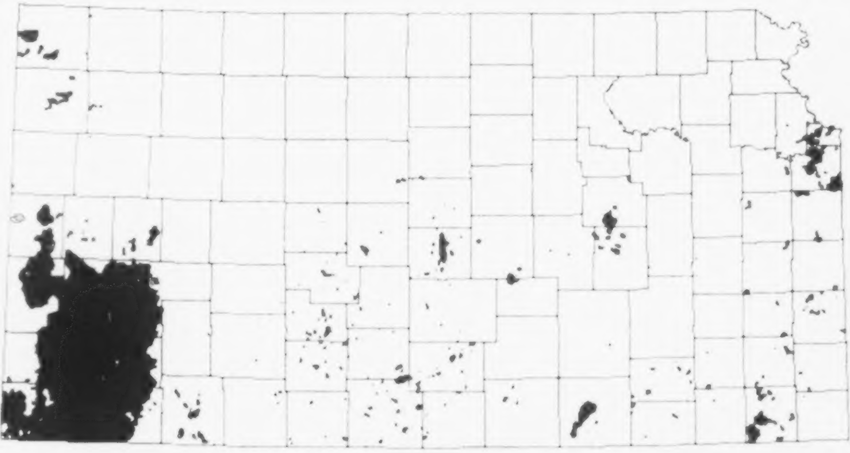
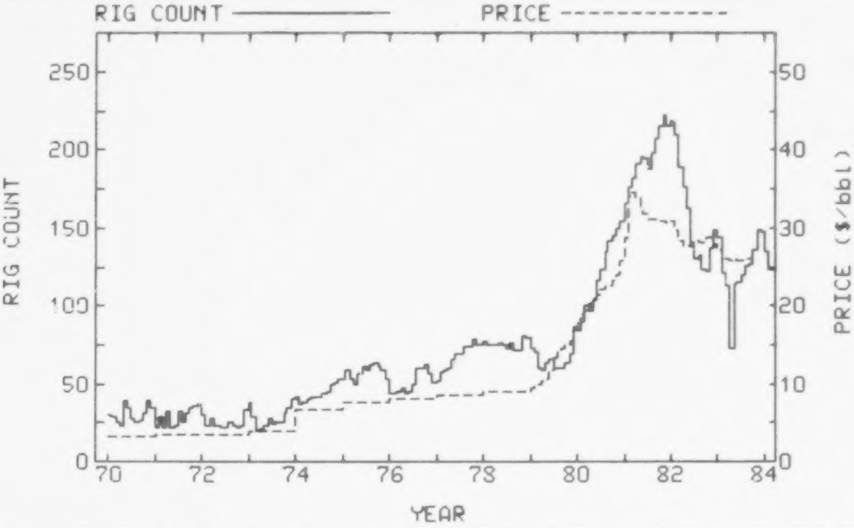


Figure 3

Comparison of Recent Changes in the Domestic Wellhead Price of Crude Oil and the Number of Active Rotary Drill Rigs in Kansas: 1970-84



$$D_t = a + b(P_t/I_t)(Q_t/C_t) - b(1/I_t) + e_t, \qquad (3)$$

where the bracketed term after b in (2) is the ratio of net expected drilling profitability relative to drilling's opportunity cost.

The discovery process models of oil exploration discussed previously indicate that, as drilling progresses within a region, the expected size of the remaining undiscovered deposits will decrease. Therefore, the quantity, Q, of expected additional production per unit drilling will tend to decrease over time. Drilling costs have also varied over time, so that the form of the quantity cost ratio in (3) as a function of time is not readily apparent. As a first approximation, this study has assumed that the value of this ratio is a constant over the time period considered. The model then becomes:

$$D_t = a + b((P_t/I_t)d) - b(1/I_t) + e_t, \qquad (4)$$

where d is the constant ratio of quantity and cost. Renaming the coefficients with $b' = bd$ and $c' = -b$ gives the following form of the model:

$$D_t = a + b'(P_t/I_t) + c'(1/I_t) + e_t. \qquad (5)$$

Using average annual values of the variables in a standardized multiple regression over the time interval 1949 to 1983 gives the following results for model (5):

$$\begin{aligned} a &= 10.85 \\ b' &= 52.27 \\ c' &= 128.82 \qquad (5C) \\ R^2 &= 0.50,\ F_{2,32} = 15.89. \end{aligned}$$

An improved fit is obtained in model (5) as measured by the R^2 value. However, the sign of the coefficient c′ is not as expected from the original form of the model in equation (4). Although the positive value of c′ does support the idea presented in Farzin (1982) and in this paper that an increase (decrease) in interest rates may discourage (encourage) exploitation of the resource, inspection of the estimation errors showed strong serial correlation of errors in model (5), indicating that the unexpected sign of the coefficient c′ is probably the result of misspecification of the model.

The nature of the correlation of error terms in this and all of the previous models is such that the errors involve primarily underestimation during the first half of the time span of the data and overestimation during the last half. Therefore, a trend variable was added to model (4) as follows:

$$D_t = a + b((P_t/I_t)d) - b(1/I_t) + gT_t + e_t, \qquad (6)$$

or

$$D_t = a + b'(P_t/I_t) + c'(1/I_t) + gT_t + e_t, \qquad (7)$$

where b′ and c′ are defined as in (5), and T_t is the time index at period t. As in all of the models, the values of the coefficients will depend upon the units selected for the variables. The data used to estimate the coefficients in this model are given in the Appendix. The estimations were made using a standardized multiple regression program based on deviations of the variables from their means, measured in units of standard deviation, a procedure which avoids loss of precision by the computer during calculation of the coefficients (Davis, 1973). The coefficients obtained using the standardized multiple regression program are as follows:

$$\begin{aligned} a &= 297.23 \\ b' &= 121.12 \\ c' &= -513.92 \\ g &= -10.93 \qquad (7C) \\ R^2 &= 0.92,\ F_{3,31} = 115.33. \end{aligned}$$

The resulting R^2 value indicates an extremely good fit in terms of the proportion of the variation in drilling rates explained by the model. The large value of the F statistic supports the model specification. In addition, the strong serial correlation of residuals present in the previous models has largely disappeared (see footnote 2). Unlike the results for the coefficients of equation (5), the signs of all of the coefficients in (7C) are as expected. The negative coefficient, g, of the trend variable, T, in equation (7) is a reflection of the decline in the expected size of undiscovered fields which occurs as a natural consequence of the discovery process. The unexpected

Figure 4

Comparison of the Domestic Wellhead Price of Crude Oil and the Number of Active Rotary Drill Rigs in Kansas: 1949-83

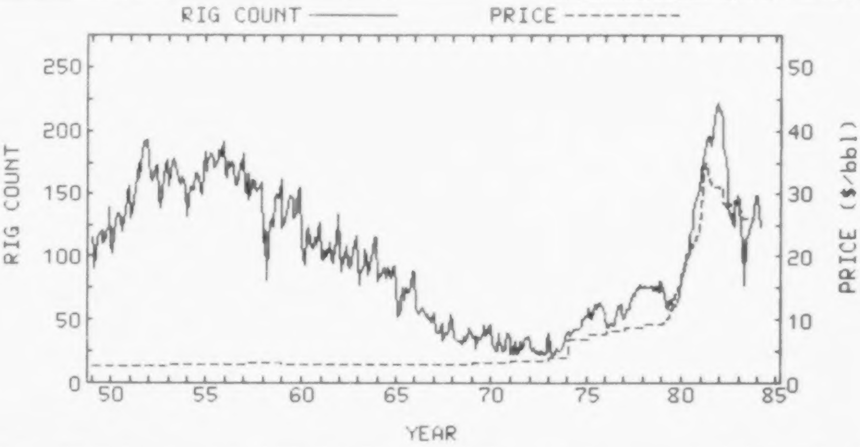
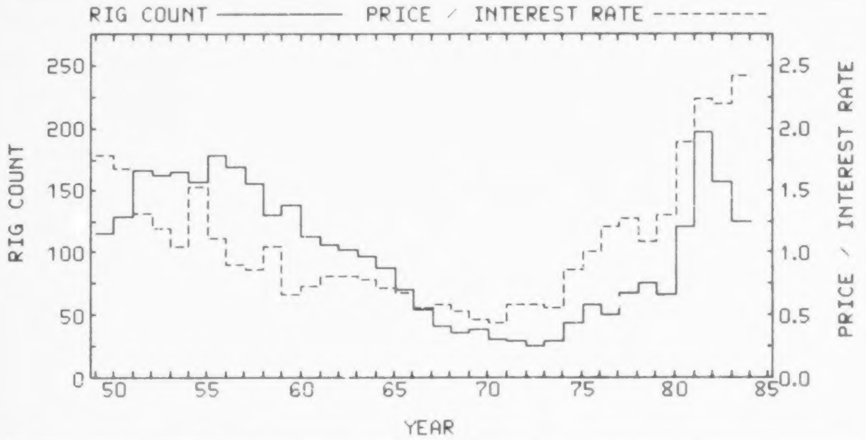


Figure 5

Comparison of the Annual Average Number of Active Rotary Drill Rigs in Kansas With the Ratio of Domestic Oil Prices and Interest Rates: 1949-83



positive sign of the coefficient c′ in (5C) apparently occurs in compensation for the lack of an appropriate trend variable in the specification of equation (5) to account for this characteristic of the discovery process. An examination of the data in the Appendix shows that the value of the inverse of the interest rate, 1/I, generally decreases as the time index increases. Therefore, a positive value of c′ in equation (5) simulates the results of a negative value of g in equation (7).

Examination of the estimation errors of model (7) finds that two of the largest errors occur in the years 1949 and 1983. In the three years immediately prior to 1949, the ratio of oil price to interest rate made an exceptionally large jump, from 0.92 in 1946 up to 1.77 in 1949. The jump was due to an increase in the price of oil from about $1.25 per barrel at the beginning of 1946 to about $2.60 per barrel in 1949. Although rig count data were not available prior to 1949, the Bureau of Mines' reports indicate that the number of wells drilled in Kansas for oil and gas increased from 2012 in 1946 to 4525 in 1951. It appears, then, that the industry may have been confronted with a capacity constraint as it tried to respond to this rapid increase in attempted entry resulting from the increase profitability of investments in oil exploration relative to alternative investments.

The error of estimation in 1983 may be explained, in part, by the severance tax on oil and natural gas production which took effect in 1983 in Kansas. The addition of the tax causes the wellhead price of crude oil in 1983 and following years to overstate the profitability of oil exploration relative to earlier years.

Therefore, the model in (7) was reestimated using the 1983 price of crude oil net of the 8 percent severance tax. The ratio of oil price to interest rate was thus reduced to 2.2293 from 2.2430. The results of the standardized multiple regression are as follows:

$$\begin{aligned} a &= 298.96 \\ b' &= 126.09 \\ c' &= -528.44 \qquad \text{(7C')} \\ g &= -11.08 \\ R^2 &= 0.93,\ F_{3,31} = 141.81. \end{aligned}$$

The error of estimation in the 1983 rig count is reduced from an overestimate of 36 active rigs to an overestimate of only 19 rigs when the adjusted parameters are used. The estimated values of rig activity obtained from equation (7) with this modification of the data are shown in relation to the actual rig counts in Figure 6, thus providing a vivid demonstration of the model's strong explanatory power. The coefficients of the model in equation (6), calculated from the results in (7C′), are as follows:

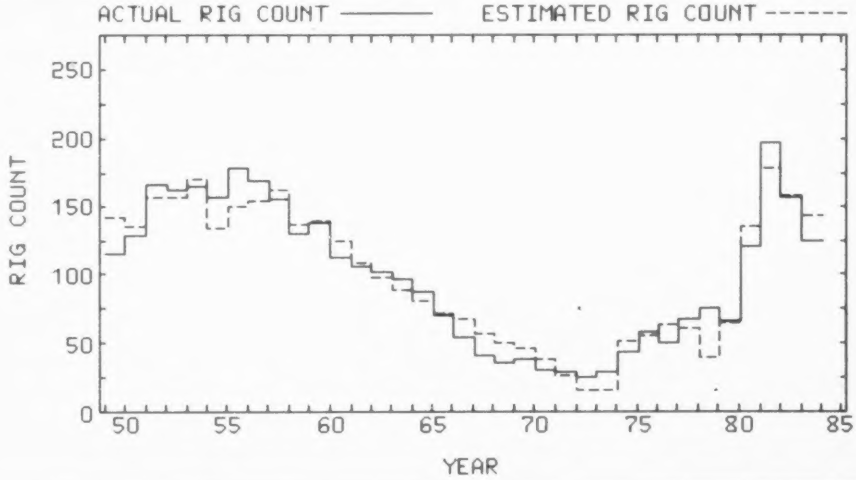
$$\begin{aligned} a &= 298.96, \\ b &= 528.44, \\ d &= 0.2386, \qquad \text{(6C)} \\ g &= -11.08. \end{aligned}$$

The signs of these coefficients are as expected.

An additional effect on drilling activity which began in 1982 was a reduction in the maximum federal personal income tax rate from 70 percent to 50 percent. The importance of this tax change for drilling investment is related to the corporate structure of the oil and gas industry in the state of Kansas. Over 90 percent of the drilling in Kansas is done by independent oil companies. While major oil companies have traditionally relied on internally generated funds to support their drilling programs, independents have relied heavily on external sources. Drilling partnerships represented 36 percent of these funds nationally in 1981 (Carey, 1982). A major attraction of these funds for investors was the fact that their investments were covered by money which would otherwise go to the federal government as taxes. With the reduction in the maximum personal income tax rate, the real costs of drilling to investors increased significantly. As a result, investment in drilling funds began to drop sharply in 1982, and drilling supported by these funds has dropped.

Figure 6

Comparison of the Annual Average Number of Active Rotary Drill Rigs in Kansas With the Estimated Values of Rig Activity Obtained From Equation (7)



The failure of 1983 drilling activity to respond to record high levels of the ratio of price to interest rate in a manner consistent with the experience of the previous 34 years is best attributed to the loss in after tax revenue to producers due to the serverance tax and the increased real cost of investment in drilling due to the reduction in federal personal income tax rates.

IV. Implications of the Model

It is the opinion of the authors that the failure of 1983 drilling activity to respond to record high levels of the ratio of price to interest rate in a manner consistent with the experience of the previous 34 years is best attributed to the loss in after tax revenue to producers due to the serverance tax and the increased real cost of investment in drilling due to the reduction in federal personal income tax rates. There is also a strong downward trend over time in the level of drilling associated with any given values of oil price and interest rate. This trend is a result of the decline in the expected size of remaining undiscovered fields which occurs as a characteristic of the discovery process over time.

The most important implication of the model for policy formation is that the level of activity involved in the attempt to develop new production of crude oil or natural gas resources is highly responsive to the profitability of oil or gas development relative to other investment opportunities.[3] This relationship implies that policies which lead to a reduction in the net price to producers (at existing levels of interest rates) will cause a reduction in drilling activity. Such a change could occur, for example, through increased production taxes such as the severance tax or through a general increase in the percentage demanded as royalty on mineral rights leases. Considering that interest rates are presently in the range of 11 percent to 12 percent and using the values of the coefficients in (6C), the model indicates that a $1.00 per-barrel decrease (increase) in the net price to producers will cause a reduction (increase) in the average daily rig count on the order of 10 or 11 active rigs. At the current levels of interest rates and oil prices, a one-percent increase (decrease) in interest rates would result in a decrease (increase) in the average daily rig count of approximately 24 active rigs. This latter result is rather significant given the recent volatility in interest rates and the continuing concern that the rapidly growing level of federal debt financing will eventually produce upward pressure on interest rates. A climb in interest rates induced by national monetary or fiscal policies, without a corresponding rise in the price of crude oil and natural gas, would severly restrict the search for these resources in Kansas.

Footnotes

[1] The six-month lag used by Eck was selected initially as a reasonable approximation of the time lag that might be encountered between the time of the decision to invest funds and the actual placement of a drill rig in operation on a lease. Subsequent evaluation of the data indicated that this did give better results than a model without lags.

[2] The form of serial correlation observed in model (5) and the preceding models is more accurately termed positive serial correlation. In this situation, a positive or negative error in one period will tend to be associated with a positive or negative error, respectively, in the following period. The presence of serial correlation will not affect the unbiasedness (the expected value of the estimator equal to the true value) or consistency (the probability limit of the estimator is the true value) of ordinary least squares estimators, but it does affect their efficiency (the variance of an efficient, unbiased estimator is less than the variance of any other unbiased estimator). Positive serial correlation will give test results indicating that the parameter estimates are more precise than they actually are. This means that the R^2 values and F-test statistics for these models are probably overstated. Another consequence of serial correlation is that the slope parameters derived by a least-squares regression may not be the true regression parameters. This may contribute to the unexpected sign of the coefficient c in (5C). For a more detailed discussion of serial correlation, see Pindyck and Rubinfeld, 1976.

[3] The results of this study were derived from a rather simple model of industry behavior. Some improvement in the quality of the results might be obtained if data could be generated relating to the quality and cost variables proposed in equation (2). Such data would quantify some important characteristics of the discovery process as well as the influence of technological changes in the drilling industry over time. Separate evaluations of price and drilling data for crude oil and natural gas might also be considered, although it is not always clear whether a dry hole was the result of exploration for oil or for gas. The authors are confident, however, that additional research will continue to support the hypothesis that the rate of attempted entry into oil and gas production is a function of the net expected profitability of production resulting from drilling relative to the opportunity costs of drilling investments.

References

American Petroleum Institute, 1983, *Basic Petroleum Data Book*, v. 3, no. 1. Washington, D.C., American Petroleum Institute.

Attanasi, E.D., 1981, "Exploration Decisions and Firms in the Mineral Industries": *Energy Economics*, v. 3, no. 2, p. 105-112.

Bureau of Mines, 1946 thru 1961, *Minerals Yearbook*. Washington, D.C., U.S. Government Printing Office.

Carey, J.H., 1982, "Funding the U.S. Petroleum Industry": *Oil and Gas Journal*, Nov. 8, 1982, p. 152-170.

Collins, D.R., 1983, "Changes in Drilling Density and Discovery Rates Through Time". Unpublished paper presented at the 12th Annual Geochautauqua, Lawrence, Kansas, November 10-11, 1983; *Journal of Mathematical Geology* (forthcoming).

Council of Economic Advisors, 1977, *Economic Report of the President With the Annual Report of the Council of Economic Advisors*. Washington, D.C., U.S. Government Printing Office, p. 260.

Davis, J.C., 1973, *Statistics and Data Analysis in Geology*. New York: John Wiley & Sons, Inc., 550p.

Drew, L.J., Schuenemeyer, J.H., and Root, D.H., 1980, "Petroleum-Resource Appraisal and Discovery Rate Forcasting in Partially Explored Regions—An Application to the Denver Basin": U.S. Geological Survey Professional Paper 1183-A, p. A1-A11.

Eck, C.R., 1983, "Oil Exploration in Kansas". Unpublished honors paper, University of Kansas, 9p.

Energy Information Administration, 1983, *Monthly Energy Review*, DOE/EIA-0035(83/12). Washington, D.C., U.S. Government Printing Office.

Farzin, Y.H., 1982, "The Effect of Discount Rate and Substitute Technology on Depletion of Exhaustible Resources": World Bank staff working paper, no. 516, Washington, D.C., The International Bank for Reconstruction and Development/The World Bank, 47p.

Federal Reserve Bank of Kansas City, 1983, "Monthly Data on Selected Interest Rates, 1970-1983": Research Division, personal communication.

Fourgeaud, C., Lenclud, B., and Michel, Ph., 1982, "Technological Renewal of Natural Resource Stocks": *Journal of Economic Dynamics and Control*, v. 4, no. 1, p. 1-36.

Hughes Tool Division, Hughes Tool Company, 1984, Rotary rigs running—by state—monthly averages; personal communication from G.C. Martinez, Hughes Tool Company.

Hotelling, H., 1931, "The Economics of Exhaustible Resources": *Journal of Political Economy*, v. 39, no. 2, p. 137-175.

Kansas Geological Survey, 1983, KONTIKI database/GIMMAP (Geodata Interactive Management Map Analysis and Production system).

Pindyck, R.S. and Rubinfeld, D.L., 1976, *Econometric Models and Economic Forecasts*. New York: McGraw-Hill Book Company, 580p.

Ramsey, J.B., 1980, "The Economics of Oil Exploration—A Probability-of-Ruin Approach": *Energy Economics*, v. 2, no. 1, p. 14-30.

Singer, D.A., 1976, RESIN, a Fortran IV Program for Determining the Area of Influence of Samples or Drill Holes in Resource Target Search": *Comp. Geosci.*, v. 2, no. 2, p. 249-260.

Singer, D.A. and Drew, L.J., 1976, "The Area of Influence of an Exploratory Hole": *Economic Geology*, v. 71, no. 3, p. 642-647.

APPENDIX

Data Table

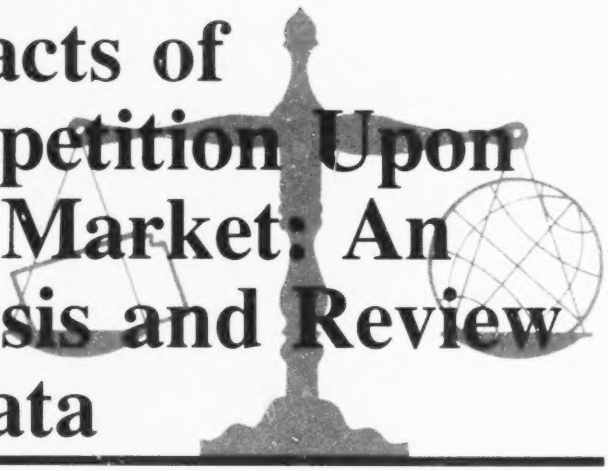
Year	Drill Rig Count (D)	Wellhead Oil Price (P) ($/bbl)	Interest Rate (I) (%)	P/I	1/I	Time Index (T)
1949	115.5	2.54	1.43	1.7760	.6993	1
1950	128.6	2.51	1.50	1.6730	.6667	2
1951	165.0	2.53	1.93	1.3110	.5181	3
1952	161.8	2.53	2.13	1.1880	.4695	4
1953	164.2	2.68	2.56	1.0470	.3906	5
1954	157.1	2.78	1.82	1.5270	.5495	6
1955	178.4	2.77	2.50	1.1080	.4000	7
1956	168.7	2.79	3.12	.8940	.3205	8
1957	154.9	3.09	3.62	.8540	.2762	9
1958	129.6	3.01	2.90	1.0380	.3448	10
1959	138.3	2.90	4.33	.6790	.2309	11
1960	112.2	2.88	3.99	.7220	.2506	12
1961	105.5	2.89	3.60	.8030	.2778	13
1962	101.5	2.90	3.57	.8120	.2801	14
1963	96.0	2.89	3.72	.7770	.2688	15
1964	86.9	2.88	4.06	.7090	.2463	16
1965	69.9	2.86	4.22	.6780	.2370	17
1966	54.5	2.88	5.16	.5580	.1938	18
1967	41.2	2.92	5.07	.5760	.1972	19
1968	35.4	2.94	5.59	.5260	.1789	20
1969	37.8	3.09	6.85	.4510	.1460	21
1970	30.4	3.18	7.37	.4310	.1357	22
1971	28.8	3.39	5.77	.5880	.1733	23
1972	25.0	3.39	5.85	.5790	.1709	24
1973	28.3	3.89	6.92	.5620	.1445	25
1974	43.8	6.74	7.81	.8630	.1280	26
1975	57.3	7.56	7.49	1.0090	.1335	27
1976	50.7	8.19	6.77	1.2100	.1477	28
1977	67.4	8.57	6.69	1.2810	.1495	29
1978	75.6	9.00	8.29	1.0860	.1206	30
1979	66.0	12.64	9.71	1.3020	.1030	31
1980	120.2	21.59	11.48	1.8810	.0871	32
1981	196.2	31.77	14.24	2.2310	.0702	33
1982	157.4	28.52	13.01	2.1920	.0769	34
1983	124.5	26.17	10.80	2.4230	.0926	35

Definitions

Price—The average domestic wellhead price of crude oil
Interest rate—The rate on 3-5 year constant maturity U. S. T-bills
Rig count—annual average of the weekly count of active rotary drill rigs as measured by the Hughes Tool Company

Data Sources

Price—Bureau of Mines (1946 thru 1961); American Petroleum Institute (1983); Energy Information Administration (1983)
Interest rate—Council of Economic Advisors (1977); Federal Reserve Bank of Kansas City (1983)
Rig count—Hughes Tool Division, Hughes Tool Company (1984); also reported weekly in *The Oil and Gas Journal*



Assessing the Impacts of International Competition Upon the Kansas Labor Market: An Exploratory Analysis and Review of the Available Data

Kenneth Walker

Dr. Kenneth Walker is a Faculty Associate of the Institute for Economic and Business Research and a visiting Professor in the School of Business at the University of Kansas.

Introduction

Advances in communication and shipping technologies have spatially expanded markets to a dramatic extent. Products that once were produced and sold exclusively within localized regions have now been opened to national and international competition. For consumers, this evolution in marketing means access to more products, greater variety, and, because of heightened competition, lower prices than would have otherwise prevailed.

For businesses, the phenomenon of internationalization poses challenges as well as opportunities. No longer can firms dominate geographically captive markets without fear of inducing competition from exporting countries. On the other hand, dynamic and progressive enterprises can take advantage of opportunities to expand markets through the increasingly accessible international arena.

Clearly, the internationalization of business is an important and ever-changing development and certainly one which merits careful examination. Kansas, although a state firmly locked within the nation's heartland, is profoundly affected by the internationalization phenomenon. The state's two major industries, agriculture and aircraft, both have strong export elements. For example, about two thirds of wheat production is typically sent abroad while export levels for aircraft fluctuate in the range of 10 to 20 percent of annual production. Although it is not possible to obtain reliable data on imports into particular states, it is reasonable to assume that Kansas industries are facing ever increasing challenges from abroad.

This study represents an initial step in the investigation of the impact of internationalization upon the Kansas economy. Its focus is on the labor market effects induced by this trend.

The first section of this article analyzes the ways in which international competition may influence the Kansas labor market and sets out an analytical model for the assessment of its impacts. The second section reviews the available information on the effects of international competition, and the third part discusses briefly the implications of this study's analysis for further research.

I. Potential Impacts of International Competition

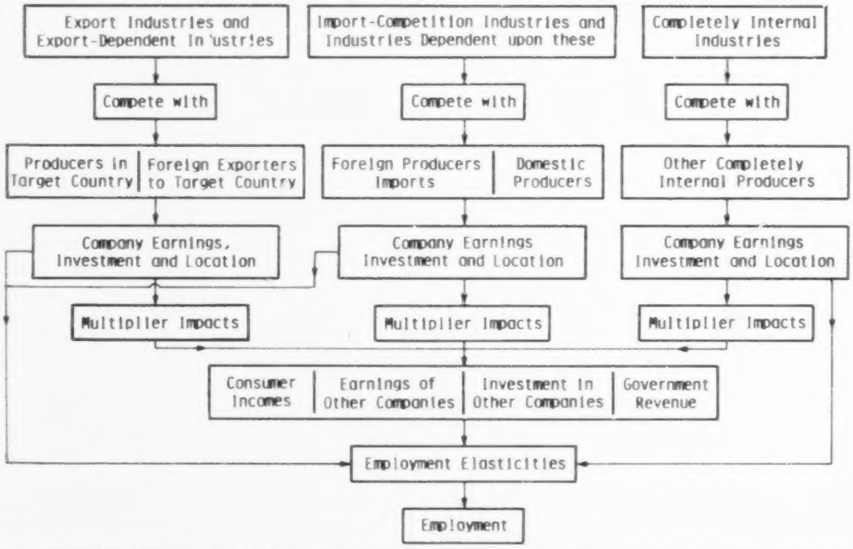
The potential impacts of international competition on employment in the state of Kansas are extremely complex to trace and to measure. Figure 1 outlines the various channels and mechanisms through which the effects of international competition may be transmitted to the Kansas labor market. For the purpose of the following analysis, the figure divides industries into three groups.

1. Export industries and industries dependent upon them;
2. Industries subject to import competition and industries dependent upon these; and
3. Completely internal industries which are not linked to imports or exports.

It should be noted that in practice an industry or company may be partially included in more than one of these three categories. For

Figure 1

Potential Impacts of International Competition Upon Employment


Export Industries and Export-Dependent Industries
Import-Competition Industries and Industries Dependent upon these
Completely Internal Industries
Compete with
Compete with
Compete with
Producers in Target Country
Foreign Exporters to Target Country
Foreign Producers Imports
Domestic Producers
Other Completely Internal Producers
Company Earnings, Investment and Location
Company Earnings Investment and Location
Company Earnings Investment and Location
Multiplier Impacts
Multiplier Impacts
Multiplier Impacts
Consumer Incomes
Earnings of Other Companies
Investment in Other Companies
Government Revenue
Employment Elasticities
Employment

example, a company's sales may be partly in export markets and partly in internal markets. It is also possible for an industry or a company to be involved in exports and, at the same time, be subject to import competition as, for example, are the automobile and aircraft industries.

The export-dependent industries may be considered "invisible exporters." Their business dealings may take place entirely within the country but may also depend to varying degrees upon the export sales of the companies for which they are suppliers. A simple example in Kansas would be the "custom cutters" who, to the extent that the wheat crop is exported, are actually working in an export industry.

As seen on the left hand side of Figure 1, the export industries and the export-dependent industries compete with two groups of other producers: producers in the target country to which the exports go and producers in other foreign countries who also export to the target country. For example, Ford and General Motors both manufacture and sell automobiles in France. They are in competition with the French automobile companies such as Renault and Peugeot. However, they are also in competition with German, British, Japanese, and Italian automobile manufacturers who export to France.

The left-hand side of Figure 1 also shows that the results of the competition of export industries and export-dependent industries with these two groups of producers affect the earnings of companies in these industries and, consequently, their decisions on investments and location of facilities. For example, if export earnings go up, such companies may decide to expand, invest further, or increase their facilities, and these actions may take place in Kansas, elsewhere in the United States, or even abroad.

These decisions may have a significant impact on the companies' employment levels. The box at the foot of Figure 1 labeled "Employment Elasticities" indicates that a given change in output of a company is not always accompanied by a similar percentage change in employment. It is possible that output will be reduced, for example, without a reduction of the labor force by the same percentage.

Employment elasticities depend on a number of factors. One such factor is the extent to which a company is labor-intensive or capital-intensive. Labor-intensive companies, for whom labor costs constitute a relatively high proportion of total costs, vary their employment levels more directly in proportion to variations in output than capital-intensive companies. Employment elasticity is also affected by the level of inventories which, in turn, depends to a considerable extent on the stage of the business cycle. When inventories are high, it is not necessary to engage further labor in order to expand sales; when inventories are low, it may be necessary to engage further labor in order to expand sales.

Company management policies also play a role. For example, a company may expand its output by increasing productivity and introducing more efficient ways of working without increasing its labor force. Companies may increase output by working overtime rather than by expanding employment. Companies which find it necessary to reduce output also differ in the extent to which they cut their labor force by layoffs or allow it to fall through attrition.

In addition to the impact of competition abroad upon employment in the export industries and export-dependent industries themselves, the effects of this competition upon the earnings, investment, and location of these companies have "multiplier" impacts upon other companies. In Figure 1, these impacts are shown as affecting consumer incomes, the earnings of other companies (for example, the construction contractor who works on the new production facilities the export company may install), investments in other companies, and government revenue. For example, stockholders in expanding export companies may use part of their dividends to invest further in other companies, thereby creating a multiplier effect of the expansion in the export sector. An expanding export sector will also pay more taxes, thus increasing government revenue. Tax revenue will also increase if consumer incomes rise as a result of higher exports. Such an increase in consumer incomes will arise from two sources: (1) the expansion of employment in the export industries and export-dependent industries, perhaps accompanied by increased wages, and (2) the multiplier effects of the additional spending.

As shown in Figure 1, the multiplier impacts will be mediated through the employment elasticities relevant to each type of multiplier effect. For example, if the consumers whose incomes increase spend all their wage increases on imports, there will be no increment to employment within Kansas resulting from that particular multiplier effect. The increment in employment will go overseas. The same effect would occur if the stockholders who have large dividends as a result of the expansion of the export sector invest them outside Kansas, that is, either elsewhere in the United States or abroad. To the extent that this out-of-state investment occurs, the impact on Kansas employment will be reduced.

Upon turning to the import-competition industries—shown in the center of Figure 1—it is once again necessary to take account of two groups of competing producers: the foreign producers of the imports and the domestic producers who are also competing with the import-competition industry. A Kansas firm subject to import competition is competing with the foreign producers of the import, other Kansas producers of the same or a competing product, and other U.S. producers of competing products. This middle part of the figure shows a chain of influences through company earnings in these industries to employment in these industries and to the multiplier impact of fluctuations in this sector upon other sectors of the economy similar to the pattern with export and export-dependent industries.

On the right-hand side of Figure 1, "Completely Internal Industries" are represented. By definition, these industries are not involved in exporting or subject to import competition. Although it would appear that such industries are in no way affected by international competition, they may be insofar as they move outside the country in order to reduce costs in the production of items for the internal U.S. market. Many developing countries offer the attraction of lower labor costs and a considerable range of incentives to induce foreign businesses to locate production facilities there. In this manner, a kind of international competition exists which affects even those industries which appear to be completely internal, i.e., those not concerned with exports or imports.

In addition to the three groups of industries shown in Figure 1, the import industries also need to be considered. These industries are in competition with domestic producers of similar articles and with other importers of similar products. Variations in such industries' earnings will have effects upon their investment and location decisions and multiplier impacts on other industries similar to those shown for the three types of industry in Figure 1.

In order to make a complete assessment of the potential and actual impacts of international competition upon employment in Kansas, information is required at each point of Figure 1 and also on the import sector and its multiplier effects on the rest of the Kansas economy.

It should also be noted that, in addition to the types of international competition indicated in Figure 1, there may be direct labor competition by foreign workers who enter the state and compete with Kansans. As noted above, an example of such direct labor competition by foreign workers is provided by the Canadian custom cutters, and there may be other instances of foreign labor competition. Compared with the effects of international competition on the various industries of Kansas, however, the impact of direct labor competition is probably not very large.

An illustration of the total impacts of variations in export sales is provided by a United States State Department calculation of the number of nonfarm jobs created by farm exports. The Department estimates that each one billion dollars of farm exports produces 30,000 jobs off the farm; therefore, as farm exports in 1981 totaled 39 billion dollars, they provided approximately 1,170,000 nonfarm jobs. These jobs would be in industries which depend directly on the farm sector and, through the multiplier process, in those industries which are closely connected to export-support businesses and to the people employed in them.

Another illustration is provided by the calculations of the impact on employment of aircraft exports reported by the Aerospace Industries Association.[1] These calculations show that, in addition to the extra employment created in the aircraft manufacturing industry itself by an increase in export sales, an equal number of jobs was created in enterprises which supply the aircraft industry and in those which supply spare parts. Specifically, the figures show that for each one billion dollars in aircraft sales, 33,150 jobs are created in the aircraft industry itself and those industries dependent upon it (11,050 jobs in manufacturing; 11,050 jobs for supply; and 11,050 spare-part jobs).[2] As export sales of new aircraft totaled 7.5 billion dollars in 1981, the total aerospace export-dependent jobs in that year were 249,000. In addition, the multiplier effect of the spending of these employees and of the companies which employ them created another 373,000 jobs in the economy generally, giving a total of 622,000 jobs generated by export sales of aircraft in 1981.

II. Review of Available Data for Kansas

In order to estimate the impacts of international competition upon the Kansas labor market, it is necessry to consider the following factors:

- the extent of international competition with Kansas producers,
- the sectors of Kansas industry which are affected by such competition,
- the magnitude of the impacts of such competition upon these sectors, and
- the repercussion of the impacts on these sectors upon the rest of the Kansas economy.

Unfortunately, available data fall far short of what would be required to give an accurate account of these considerations. The data do, however, provide an indication, permitting a broad assessment of the impact of international competition.

A. FARM EXPORTS

Farm exports from the United States as a whole tripled in the 1970s and were about 40 percent of farm output at the end of the 1970s. In Kansas, such exports consisted largely of wheat and flour which comprised over half the total of Kansas agricultural exports.

Table 1
Value of Wheat Production and Wheat Related Exports for U.S.: 1966-1980

	Value of Production (Billions)	Total Exports Wheat and Products	Percentage Exported
1966	2,129.9	1,431.0	67.2
1967	2,090.1	1,341.3	64.2
1968	1,929.1	1,305.8	67.7
1969	1,795.7	932.6	51.4
1970	1,802.3	965.5	53.6
1971	2,166.7	1,225.9	56.6
1972	2,704.1	1,071.0	39.6
1973	6,744.6	2,387.0	35.4
1974	7,287.3	4,747.6	65.0
1975	7,549.8	5,000.9	66.2
1976	5,867.8	4,803.4	81.9
1977	4,764.6	2,825.4	59.3
1978	5,280.6	3,876.5	73.4
1979	8,070.4	4,577.6	56.7
1980	9,396.7	6,632.6	70.6

Source: R. Sexton and R. Glass, "Instability in the Kansas Economy," *Kansas Business Review*, Vol. 6, Nos. 4 and 5, March, April-May, June, 1983, p. 4.

Table 1 shows the value of wheat production for the United States between 1966 and 1980, and Table 2 gives the value of Kansas wheat production for the period 1972-1982. Very wide fluctuations occurred in the value of total production and in the percentage of production that was exported. Such variations impact directly on employment in the wheat farming industry and upon the earnings of Kansas wheat farmers. Since farm employment in Kansas has dropped (as in all the farm states) and is now only 5.0-6.0 percent of the state's labor force, the impact of international competition upon wheat exports is likely to be greater upon the income of Kansas wheat farmers than upon employment in the industry. Total farm income in Kansas (including domestic and export sales) is 5.0-7.0 percent of Kansas' personal income, much below what it used to be, but still large enough to have a substantial multiplier effect upon other industries. It would require very careful study to track through the impacts and multiplier effects of such variations in farm income arising from fluctuations in exports. The U.S. State Department's calculation that one billion dollars of farm exports produce 30,000 nonfarm jobs nationally might not hold for Kansas since the national figure includes employees at the grain-loading ports in other states and possibly other employees for whom there may be no equivalent in Kansas. Nevertheless, fluctuations in Kansas farm export earnings will have considerable influence upon Kansas employment levels.

Fluctuations in export earnings arise partly from international competition and partly from other factors. Such factors include exchange rates, the use of restrictions on grain exports as an international political weapon, and the retaliation of foreign grain-importing

Table 2
Farm Value of Wheat Production in Kansas: 1972-1982

	Acres Sown (Thousands)	Acres Harvested (Thousands)	Yield (Bu.)	Production (Thou. Bu.)	Price (Per Bu.)	Farm Value (Thousand)
1972	10,300	9,400	33.5	314,900	$1.68	$ 529.03
1973	10,800	10,400	37.0	384,800	3.75	1,443.00
1974	12,000	11,600	27.5	319,000	3.86	1,231.34
1975	12,800	12,100	29.0	350,000	3.42	1,200.07
1976	12,900	11,300	30.0	339,000	2.59	818.01
1977	13,200	12,100	28.5	344,850	2.24	772.46
1978	11,300	10,000	30.0	300,000	2.89	876.00
1979	12,100	10,800	38.0	414,400	3.72	1,587.60
1980	13,000	12,000	35.0	420,000	3.78	1,587.60
1981	14,000	12,200	25.0	305,000	3.75	1,143.75
1982	14,000	13,200	35.0	462,000	3.35	1,547.00

Source: R. Sexton and R. Glass, "Instability in the Kansas Economy," *Kansas Business Review*, Vol. 6, Nos. 4 and 5, March, April-May, June, 1983, p. 4.

countries for U.S. restrictions on their exports to the U.S. (A recent example of the latter was the restrictions on U.S. grain exports to China which that country imposed in response to U.S. restrictions on Chinese exports of textiles to the U.S.)

International competition with U.S. farm exports intensified during the 1970s, particularly from certain developing countries. This development and other factors indicate that U.S. farm exports will not expand in the 1980s at the same rate as in the 1970s when, for example, the percentage of total U.S. grain production that was exported rose from 16 percent in 1970 to 43 percent in 1980. Farm exports fell sharply in 1982 and are unlikely to resume their upward trend.[3]

It may be noted that the greater the proportion of farm production that is exported, the greater the fluctuations in farm income since the export market is more volatile than the domestic market. Thus, if the export percentage falls during the 1980s, fluctuations in farm earnings will be somewhat lower than they would otherwise have been.

In order to assess the implications of international competition in farm exports for the Kansas economy and labor market, a careful study would be necessary of the prospects for Kansas farm exports to various markets and of the competitiveness of Kansas producers vis-a-vis other producers of farm exports elsewhere in the U.S. and vis-a-vis the producers from other countries who export farm products to the same foreign markets as Kansas farm exporters. To the extent that the projections for the country as a whole apply to Kansas, it seems probable that the prospects for the state's farm exports in the future are considerably shakier than they have been in the last ten years. Consequently, the job prospects for workers whose employment is dependent on farm exports are likely to be less secure than in the past. The impacts of variations in Kansas farm export earnings upon the rest of the Kansas economy are likely to be significant, although such variations result only partly from international competition.

B. MANUFACTURING EXPORTS

Table 3 gives information for 1977 and 1980 for Kansas and the United States on employment in industries producing manufactured exports and in the industries that are dependent on such exports. It can be seen that employment in Kansas nonmanufacturing industries which are dependent on manufactured exports approximately equaled employment in the industries manufacturing exports in 1977 and was only a slightly lower proportion in 1980. As a percentage of total civilian employment, the number of jobs in the manufacturing export industries and the industries dependent upon them rose from 2.9 percent to 4.0 percent between 1977 and 1980. Employment in these industries, as a percentage of total private sector employment, rose from 3.3 percent in 1977 to 4.7 percent in 1980.

Table 3
Employment Related to Manufactured Exports by Major Economic Sector: Kansas and United States, 1977-1980

Major Economic Sector	Kansas: Number Employed (Thousands) 1977	Kansas: Number Employed (Thousands) 1980	Kansas: Percentage Rate of Change 1977-1980	United States: Number Employed (Thousands) 1977	United States: Number Employed (Thousands) 1980	United States: Percentage Rate of Change 1977-1980
Trade	5.6	9.4	+69	489.0	837.7	+71
Business Services	1.7	2.6	+53	215.0	298.7	+39
Transportation Communication & Utilities	1.5	2.4	+60	185.0	274.2	+48
Other, Including Mining & Agriculture	4.3	4.7	+10	379.0	528.6	+40
Total Non-Manufacturing	14.3	20.3	+41	1268.0	1939.2	+53
Manufacturing	15.8	24.1	+54	1988.2	2839.7	+43
Total	30.1	44.4	+48	3256.2	4778.9	+47
Total as % of Civilian Employment	2.9	4.0	+38	3.6	5.0	+39
Total as % of Private Sector Employment	3.3	4.7	+42	4.4	6.0	+36

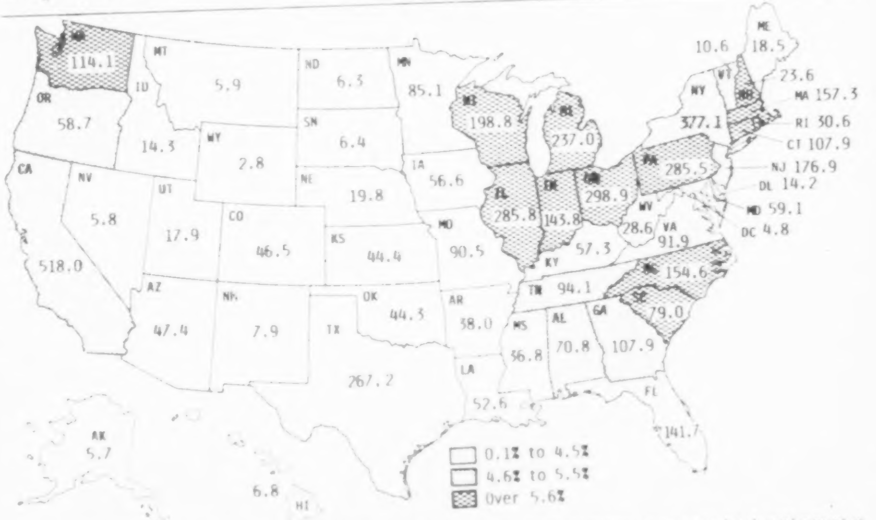
Source: U.S. Department of Commerce, Bureau of the Census, Annual Survey of Manufactures, 1980.

Figure 2 compares Kansas with other states with respect to the percent of total civilian employment in the state which was export-related in 1980. Figure 3 gives similar information for the percentage of employees in manufacturing industries who were in export-related employment and shows that this percentage in Kansas, 12.5 percent, was higher than in a number of states although it was lower than the 13.7 percent national average.

The pattern shown in Figures 2 and 3 is affirmed by the information in Table 4, which gives similar data for particular industries in Kansas and the U.S. Although data are unavailable for a number of industries, almost all the industries for which there are data show a substantial increase in export-related manufacturing employment between 1977 and 1980 as well as a considerably greater increase between 1972 and 1980.

As indicated above, in order to estimate the total impact upon employment of this expansion in export-related employment, it is necessary to know the expansion's multiplier effects. No estimate of these multiplier effects is available, but some indication is given by Sexton and Glass[4] of the effect of aircraft shipments by the Wichita aircraft industry upon employment in Wichita and the reper-

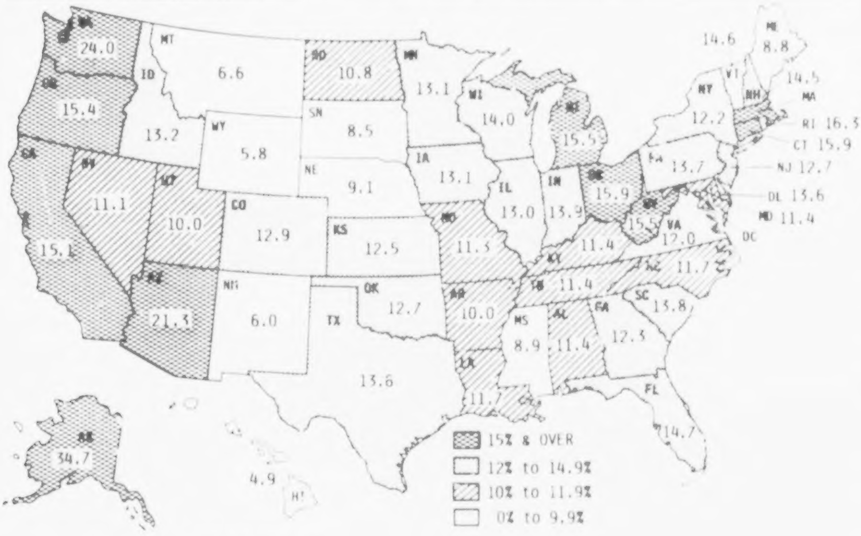
Figure 2
Employment Related to Manufactured Exports for States:* 1980



* Shading indicates export-related employment as a % of civilian employment; numbers are export-related employment in thousands.

Source: U.S. Department of Commerce, *Annual Survey of Manufactures*, 1980.

Figure 3
Manufacturing Export-Related Employment as a Percent of Manufacturing Employment: 1980



Source: The Conference Board of Canada, Inc.

cussions of such employment on employment in the state in general. These calculations, displayed in Figure 4, show that the total impact of variations in aircraft sales upon employment in Wichita and Kansas is substantial.

In this connection, it is important to note that Sexton and Glass also found that almost all the volatility of employment in Wichita during the period was due to fluctuations in employment in the aircraft and parts industry. Such fluctuations, however, were found to be partly dependent on the national business cycle. Volatility in export earnings is, therefore, only one factor in the fluctuations of employment in the Wichita aircraft and parts industry. Furthermore, export earnings are affected by other factors (notably competition with other U.S. exporters) as well as by international competition.

No information is available on the extent to which the substantial (and increasing) export-related manufacturing employment in Kansas is subject to competition from abroad. As noted in Section I, Kansas exporters may be in competition with other exporters in Kansas, exporters in other states who sell in the same export markets, and foreign producers. Detailed study of the markets and industries concerned would be required to assess the role of foreign competition, but it can certainly be assumed to exist and to affect employment in Kansas export manufacturing. In certain industries (aircraft, for example), it is known to be intense.

It must also be noted that the statistics provided give no indication of what might be called "failed exporters"—companies which are shut out of export markets by competition (from U.S. exporters or foreign producers).

Table 4
Manufacturing Exports and Exported-Related Manufacturing Employment: 1972-1980

	Value of Export-Related Shipments* as Percentage of Total Manufacturing Output				Export-Related Employment as Percentage of Total Manufacturing Employment			
	1972	1977	1980	Percentage Rate of Change 1977-1980	1972	1977	1980	Percentage Rate of Change 1977-1980
United States	8.0	10.4	14.1	+36	4.1	10.2	13.7	+34
Kansas	5.9	7.2	10.1	+40	5.0	9.4	12.5	+33
Kansas Industries								
Food & Kindred Products	2.4	5.3	8.8	+66	1.1	4.0	5.0	+25
Apparel & Other Textile Products	N.A.	N.A.	12.9		N.A.	N.A.	8.6	
Lumber & Wood Products	N.A.	5.9	5.3	-10	N.A.	5.4	3.9	-27
Furniture & Fixtures	N.A.	0.9	1.5	+67	N.A.	Z	Z	
Chemicals & Allied Products	4.8	8.5	10.1	+19	1.1	9.4	10.9	+16
Paper & Allied Products	N.A.	7.1	8.5	+20	N.A.	5.4	7.1	+32
Printing & Publishing	N.A.	N.A.	2.8		N.A.	N.A.	2.4	
Petroleum & Coal Products	N.A.	2.0	3.7	+86	N.A.	2.4	2.0	-17
Rubber, Misc. Plastics Products	N.A.	N.A.	18.3		N.A.	N.A.	16.9	
Stone, Clay & Glass Products	N.A.	3.5	4.5	+29	N.A.	2.7	3.7	+37
Leather, Leather Products	N.A.	N.A.	6.9		N.A.	N.A.	Z	
Fabricated Metal Prod.	3.5	6.2	5.6	-10	1.2	4.2	5.3	+26
Primary Metal Indust.	N.A.	N.A.	25.1		N.A.	N.A.	19.5	
Machinery, Except Electrical	14.7	13.1	17.9	+37	6.8	12.0	14.2	+18
Electric, Electronic Equipment	N.A.	9.2	13.9	+51	N.A.	10.5	13.5	+29
Transportation Equip.	15.6	11.6	18.3	+58	13.4	16.7	21.0	+26
Instruments, Related Products	N.A.	30.0	23.1	-23	N.A.	9.0	5.1	-43
Miscellaneous Manuf.	N.A.	3.2	22.8	+615	N.A.	Z	21.4	+950
Central Administrative Offices, Auxiliary					N.A.	8.1	11.2	+38

Key: N.A. = Not Available; Z = [illegible] percent.

* [illegible]

[illegible] Manufactures. Rates of change calculated by author.

The impact of such concealed competition in export markets could be considerable. Again, detailed studies would be required to assess its magnitude.

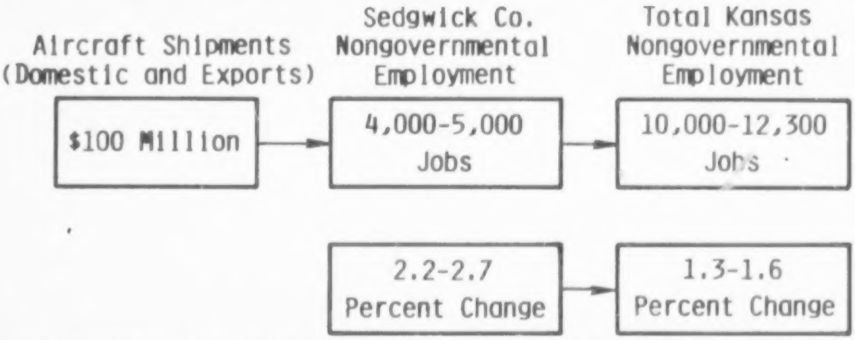
C. KANSAS IMPORTS

The impacts of import competition upon the Kansas labor market are transmitted through two channels. The first is the sale of foreign imports within Kansas which compete directly with similar articles made by Kansas producers. The second is the effect of import competition upon Kansas producers who sell to markets in other states.

No statistics are published on the extent to which imported goods compete with Kansas producers, either in Kansas markets or in the out-of-state U.S. markets of Kansas producers. In these circumstances, resort must be made to the data available at the national level. These data are shown in Table 5 for certain industries between 1971 and 1977 (the most recent data available). In all the industries shown except meat packing, the value of imports as a percentage of total output rose between 1971 and 1977, in most cases by substantial proportions. Whether, if appropriate data were available for Kansas, they would reveal a similar situation to that as shown for the country as a whole is not known. It may be

BEST AVAILABLE COPY

Figure 4
Aircraft Shipments and Employment in Wichita and Kansas


Aircraft Shipments (Domestic and Exports)
Sedgwick Co. Nongovernmental Employment
Total Kansas Nongovernmental Employment
$100 Million
4,000-5,000 Jobs
10,000-12,300 Jobs
2.2-2.7 Percent Change
1.3-1.6 Percent Change

Source: From calculations by R. Sexton and R. Glass, "Instability in the Kansas Economy," *KBR*, Vol. 6, Nos. 4-5, March, April-May, June, 1983.

concluded, however, that import competition for Kansas producers has increased over this period and probably will continue to increase.

In assessing the impacts of such import competition upon employment, it may be tempting to argue that, if such imports (both into the Kansas market and the out-of-state markets of Kansas producers) had not occurred, employment in Kansas would be proportionately higher, on the assumption that Kansas producers would have been able to supply the sales which have gone to imports.

This argument assumes, however, that the articles that could have been produced by Kansas producers would have been adequate substitutes for those which have been imported. To the extent that this assumption is not valid and the imported articles differ significantly from those that could have been produced by Kansas producers, the argument needs to be modified. It might be claimed that, if Kansas customers had not bought the imported goods, they could have spent the same amount of money on other goods produced in Kansas. (For example, a consumer who would have bought French wine could spend the same amount of money on soft drinks or on gasoline.) To assess the validity of this argument, it is therefore necessary to have detailed information on the nature of the imported goods and on the expenditure patterns of the consumers and businesses who buy them.

Account must also be taken of the employment elasticities relevant to the particular industries subject to import competition. If, in the absence of imports, the output of a particular industry might have been higher by a certain percentage (for example 10 percent), it does not follow that employment would have been 10 percent higher since it may be possible for an industry to expand output by 10 percent without a corresponding increase in employment.

There is also the fact to consider that certain imports may be used in the manufacture of products for the domestic market or, possibly, for export markets. In this case, the fact that companies can acquire these imported goods at lower prices than the corresponding domestic product lowers the costs of production for local producers, thereby, perhaps, enabling them to offer more employment than would otherwise have been possible. In some cases, the imported goods may be essential to the product, and, if they were not imported, the product would not be made in the U.S.

It is also possible that, if imports that potentially affect Kansas producers had not take place, U.S. export earnings (and perhaps those of Kansas exporters) would have been lower, thereby reducing employment. One way in which this reduction could happen would be if part of the imports were used to produce exports and the domestic substitute for the import cost the export producer more. This situation might raise the producer's price in the export market and perhaps reduce sales. If the producer did not raise the price, then earnings would be less. In either case, export earnings would fall.

Another way in which export earnings might fall if imports were eliminated or reduced is through the depressing effects of lower export earnings on incomes in the countries from which the imports into the U.S. would have come. With lower incomes, such countries would not be able to buy as many exports from the U.S. Furthermore, countries whose exports to the U.S. are restricted by the U.S. may retaliate by restricting U.S. exports to them (as in the case of Chinese restrictions on U.S. grain imports mentioned above).

The net effect upon Kansas employment of elimination or reduction of imports which compete with Kansas producers is, thus, very complex and impossible to assess without further detailed investigations. Figure 5, however, provides an outline of the impacts of import protection upon the economy.

D. FOREIGN INVESTMENT IN KANSAS

It has been estimated that, in 1979, 1,655,756 workers were employed in foreign-owned firms in the U.S., of which 820,260 were in manufacturing industries. In Kansas in the same year, total employment in foreign-owned firms amounted to 11,882 persons of whom 6,112 were engaged in manufacturing industries. This figure amounted to about 1.3 percent of total nonfarm employment in the state. The Appendix provides a list of the manufacturing industries in which there is substantial foreign investment and the countries from which these investments come.

The impact of such foreign investment on the labor market is difficult to assess. To the extent that the employment provided by such investment is an alternative to imports which would be made by workers in foreign countries, such employment is a net addition to

Table 5
Value of Imports as Percentage of Total Output,* Selected Industries, United States: 1971–1977

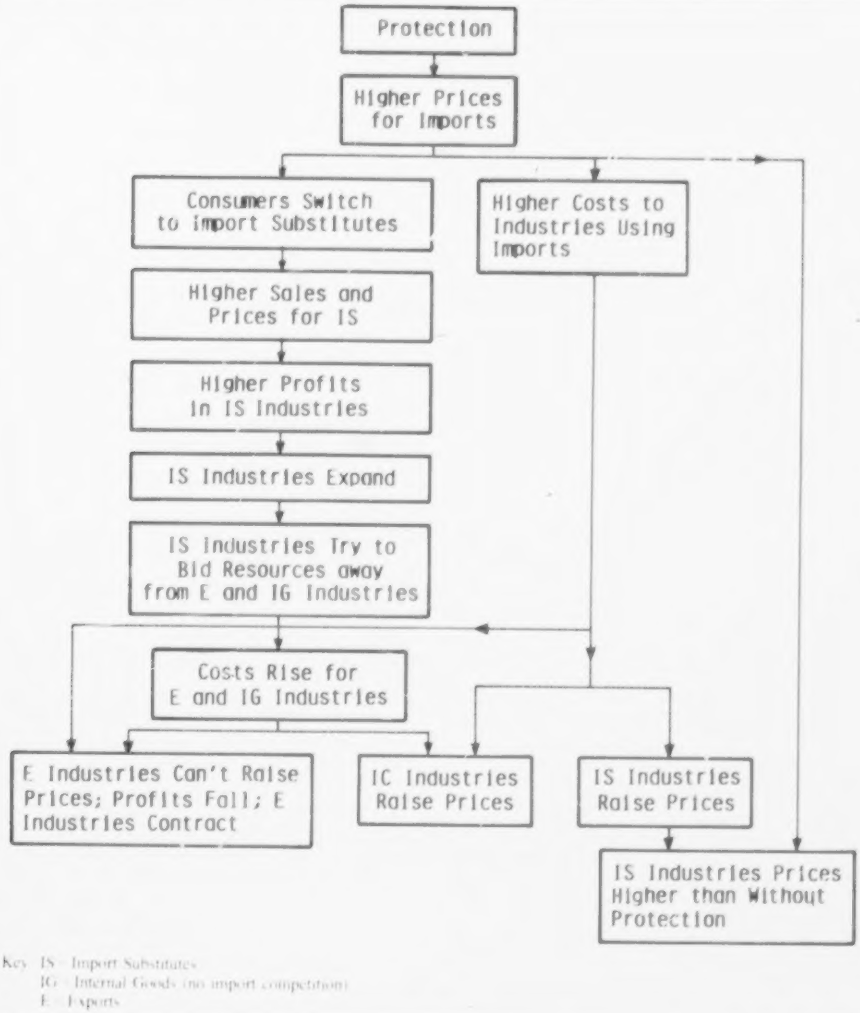
Industry Classification		1971	1972	1975	1976	1977
2011	Meat Packing	5.3	5.2	4.0	4.7	4.6
27	Printing & Publishing	1.2	1.5	1.5	1.5	1.5
30	Rubber & Miscellaneous Plastic products	N/A	4.9	5.3	6.8	6.5
344	Fabricated Structural Metal Products	2.0	1.6	2.0	2.2	2.4
352	Farm & Garden Machinery	N/A	10.2	12.9	12.4	12.4
371	Motor Vehicles & Equipment	14.8	16.0	20.9	19.8	19.0
3721	Aircraft	1.1	1.6	2.11	1.6	3.1

* Value of imports plus value of domestic production

Key: N/A = Not Available

Source: U.S. Department of Commerce, *U.S. Commodity Exports and Imports as Related to Output*, various years.

Figure 5
Impacts of Protection Upon the Economy


Protection
Higher Prices for Imports
Consumers Switch to Import Substitutes
Higher Costs to Industries Using Imports
Higher Sales and Prices for IS
Higher Profits in IS Industries
IS Industries Expand
IS Industries Try to Bid Resources away from E and IG Industries
Costs Rise for E and IG Industries
E Industries Can't Raise Prices; Profits Fall; E Industries Contract
IC Industries Raise Prices
IS Industries Raise Prices
IS Industries Prices Higher than Without Protection

Key: IS = Import Substitutes
IG = Internal Goods (no import competition)
E = Exports

employment within the state. If, however, such a foreign-owned company repatriates its earnings to its home country, the total impact on employment will be less than it would be from a comparable local company which spends its earnings investing further in Kansas. It is also necessary to note that, if the foreign-owned company imports components in order to make its product or supply a service, the effect of import-replacement upon employment is thereby reduced.

Other considerations enter into an assessment of the total impact of foreign investment upon employment in the state. If the foreign-owned firm is a subsidiary of a very large multinational company, the competitive conditions for local Kansas firms are significantly altered. Instead of competing with their peers, they may find themselves competing with a giant corporation with world-wide resources. Furthermore, the foreign-owned company's decisions on expansion or reduction of its operations (with their corresponding impacts upon employment in the state) may be made in relation to the relative profitability of the operations of the multinational corporation's subsidiaries across the globe. Thus, although the foreign-owned company may be making reasonable profits in Kansas, if these are lower than the parent company can earn on investments in other countries (or in other states), it may close or reduce the scale of the operations in Kansas.

A further consideration in connection with foreign investment in Kansas by foreign multinationals is whether such multinational companies might behave differently from U.S. multinational companies which operate facilities in Kansas. U.S. multinationals have, from time to time, made decisions to locate production facilities abroad rather than to expand in the United States. To assess the affect of foreign investment, it is necessary to compare the behavior of the foreign investing company with that of U.S. companies.

While this article has been concerned with assessing the impacts of international competition upon the Kansas labor market, it should be noted that such impacts need to be set in the wider context of international influences generally upon the Kansas economy. The examples of Chinese restrictions on U.S. grain exports and the use of grain exports as a weapon in international relations illustrate types of international influence which impact on the Kansas economy which are not in themselves the result of direct international competition with Kansas producers of grain. Normally, the effects of world-wide recession upon farm earnings in Kansas and elsewhere in the United States do not simply result from international competition, but from general economic conditions. The ability of Kansas wheat farmers to export to EEC countries is affected, not only by their competition with producers in these countries and in other countries exporting to them, but also by the total pattern of trade relations between the United States and the EEC.

In developing policies to take appropriate account of the impact of international competition upon the Kansas labor market, therefore, it is necessary to monitor and adjust to the whole range of international influences which affect the Kansas economy. In order to do this, it is necessary to trace the international linkages through which each influence is transmitted.

III. Summary and Concluding Comments

This study has provided an overview of the potential impacts of the internationalization of business upon the Kansas economy, particularly its labor markets. Both descriptive and analytic in orientation, the paper has developed a research framework within which the effects of international competition can be accurately assessed. A principal outcome of this aspect of the investigation is to demonstrate the considerable complexity involved in analyzing international influences on business. Both import- and export-related industries must naturally be considered but so must nominally internal sectors if they are closely tied, through demand or supply linkages, to industries in the international arena.

Aside from the challenge of the considerable complexity which must be incorporated into analytical models of international linkages, sound investigation must also confront the paucity of data resources to underpin the analyses. As was demonstrated in Section II of this report, key questions must for now remain unanswered due to informational shortages. The deficiency is due, in part, to inherent data collection difficulties as, for example, would be encountered in attempting to monitor the import flow into individual states. Other aspects of the problem are based on the need to secure multinational cooperation in order to monitor the complex flow of products through world markets. Finally, the niggardly state of the statistical stockpile also must be blamed upon the relative newness of internationalization as a significant, if not a dominant, factor in the economic development scenario. Only as analyses, such as the present one, are developed and refined will the specific informational needs be isolated and eventually accommodated.

Thus, this exploratory study closes without a list of definitive conclusions to offer. International influences have been demonstrated to be important and evolving factors within Kansas, introducing new challenges and opportunities for the state's economic leaders. However, with a few notable exceptions, exact measures of influence and importance were not obtained. Although these key questions are accessible through the study's analytical framework, the answers must await a more comprehensive, long-term study and the development of better statistical resources.

Footnotes

[1] Aerospace Industries Association preliminary study by Chase Econometrics Associated (1982 dollars).

[2] Aerospace Industries Association, "Aerospace Facts and Figures," 1981-2.

[3] See M. Drabenstott, "The 1980s: A Turning Point for U.S. Agricultural Exports?", Federal Reserve Bank of Kansas City, *Economic Review*, April 1983, pp. 3-15.

[4] R. Sexton and R. Glass, "Instability in the Kansas Economy," *Kansas Business Review*, Vol. 6, Nos. 4-5, March, April-May, June 1983, pp. 10-11.

Appendix

Foreign Investment in Kansas Plants

Products

Liquid carbon dioxide
Metalworking machinery
Aluminum products
Petroleum refining
Chemicals and allied products
Plastic pipes and fittings
Glass fiber insulation
Plastic forming machinery
Lead-acid batteries
Biologicals, veterinary pharmaceuticals, vaccines, etc.
Internal combustion
Ceramic wall and floor tile, etc.
Farm machinery and equipment
LPA underground storage
Printing and publishing
Grain elevator
Laundry and dry cleaning supplies, etc.
Industrial and agricultural chemicals
Vitamin B-5
Optical frames and parts
Aircraft and missile machine parts
Oil and gas exploration and production
Plastics
Blended fertilizer
Newspapers
Aircraft instruments
Surgical and medical instruments
Cement
Rail anchors
Aircraft and aircraft parts, auxiliary equipment
Food processing machinery
Windshields and fairings for motorcycles; safety
Helmets
Food additives for margarine and breads
Plastic injection moldings machinery
Steel distribution

Countries

United Kingdom
Japan
Belgium
West Germany
France
Italy
Canada
Netherlands
Denmark

Source: Kansas Department of Economic Development

Although a state firmly locked within the nation's heartland, Kansas is profoundly affected by the internationalization phenomenon . . . a development that presents the state's economic leaders with new challenges and opportunities.

An Economic Analysis of a "Make Good" Program: The Blind Vending Facilities Operation in Kansas

Robert Glass
Richard Sexton

Robert Glass and Richard Sexton are, respectively, a Research Assistant and Research Economist at the University of Kansas Institute for Economic and Business Research.

Introduction

The Randolph-Sheppard Act (1936) directed that state licensing agencies be commissioned to provide opportunities and encouragement for blind people to become self-sufficient and contributing members of society. This legislation, subsequently strengthened by the Randolph-Sheppard Act Amendments (1974), is the statutory basis behind the Kansas Blind Vending Facilities Program which facilitates the establishment and operation of blind-managed vending operations in public places.

The blind vending programs in Kansas and elsewhere offer visually handicapped workers an opportunity to become active participants in the work force. As such, these programs contribute to blind persons' sense of self-esteem, and they engender a heightened public awareness of the contributions the handicapped can—and do—make to society.

While many would assert that programs to develop handicapped workers' role in the marketplace are justified on the basis of these intangible benefits alone, a more pragmatic approach may require that these programs, just as any other, justify their mandate by yielding a tangible, positive economic impact at least commensurate with the associated public cost outlay.

Based upon this approach, the Institute for Economic and Business Research recently conducted an analysis of the Blind Vending Facilities Program in Kansas for the period covering 1978-82 and concluded that the program indeed does yield tangible economic benefits well in excess of its level of public support and, as such, has a sound economic justification irrespective of the magnitude of its intangible benefits.[1,2] This article summarizes the Institute's study. Section I provides an overview of some of the distinctive methodological difficulties faced in this type of analysis and offers a conceptual model committed to their resolution which, in turn, forms the analytical framework for the study. Finally, Section II presents and discusses the Program's estimated impacts.

I. Methodology for Estimating the Economic Impact

The direct benefits of the Vending Services Program (VSP) or other similar programs designed to provide economic opportunities for the handicapped are the increased employment they stimulate along with concurrent reductions in public assistance roles. These benefits can then be compared and evaluated relative to public outlays for the project such as expenditures to train the visually handicapped workers and to provide physical facilities.

In measuring employment impacts from this type of program, the fundamental question concerns how much, if any, of the increased volume of handicapped worker employment represents employment growth and how much of it, if any, merely represents a transfer of jobs from the able-bodied to the handicapped.

To the extent a job transfer takes place, these self-help programs cannot be considered to provide a bona fide economic impact. No net expansion of the economy takes place, and no net reduction in public assistance roles is generated either, assuming the displaced able-bodied workers are eligible for one or more transfer programs.

The displacement issue can only be assessed from an overall perspective of the affected area economy and then only within a dynamic framework. Because the services provided by the blind within the VSP could also be provided by sighted workers and because, in a well-functioning market economy, all viable economic opportunities will be exploited, the VSP must cause a transfer of employment from sighted to blind workers within this single economic sector. Therefore, a positive economic impact will flow from programs such as the VSP only if the displaced, sighted workers are able to reassimilate themselves into other sectors of the economy—sectors in which, unlike the vending services industry, the blind would face an inherent occupational disadvantage.

Whether the necessary reassimilation of displaced workers takes place depends critically upon the condition of the affected area's economy. If employment is full and growth is rapid, disenfranchised workers should become quickly reacquainted with the work force and, displacement is a fleeting and insignificant phenomenon. However, the prognosis for immediate reassimilation is less sanguine for stagnant economies facing high unemployment. Here, displacement may well be an important and recurring factor, and it will have a stultifying effect on a self-help program's potential for positive impact.

Fortunately, stagnant economies themselves are most often transitory, with recessions inevitably giving way to periods of expansion. Therefore, from a long-term, dynamic prospective, displacement will almost never be permanent, and, as economies grow and new opportunities are created, those displaced by isolated structural events such as the VSP must eventually themselves find new opportunities.

From this perspective, displacement is a function of time and local economic conditions with the rate of displacement, d(t), declining overtime and with the time path itself dependent upon economic conditions—better conditions (as measured, for example, by the employment growth rate) stimulating a faster rate of decay in the displacement factor.

Aside from this basic theory, however, there are few categorical rules to guide modeling of the displacement process, a condition that necessitates the exercise of some discretionary judgments on the analysts' part. Based, then, upon the judgment of the Institute analysts, the following assumptions underpin the analysis. The poor economic conditions which prevailed in Kansas over 1980-82 suggest that initial period displacement would be high. Therefore, it was assumed that $d(t_o) = 1.0$ where t_o is the time period immediately following an infusion of economic activity from the Vending Services Program. It was further assumed that total reassimilation of displaced workers would occur after five years: $d(t_o + 5) = 0$. And, because no other adjustment rate would seem innately superior to it, a simple, linear adjustment was assumed over the five-year period: $d(t_o + 1) = 0.8$, $d(t_o + 2) = 0.6$, $d(t_o + 3) = 0.4$, and $d(t_o + 4) = 0.2$.

In the forthcoming economic impact calculations, these adjustment parameters are applied only to new levels of economic activity flowing from the Program during the study period. For that level of activity which existed through 1978, it was assumed that the displacement effects had already worked their course or, in other words, that those displaced by the development of blind vending facilities had already become reconstituted within the work force. This assumption is plausible given the Program's relatively long history and the favorable economic conditions which prevailed during the 1975-78 period.

Once the Program's primary or direct impacts have been considered, their impact on the rest of the economy must be accounted for. A fundamental economic tenet is that economic activity begets further such activity. Therefore, new income and employment generated through the VFP will, as it diffuses through the economy, create additional income and employment through what is commonly known as the multiplier process. These secondary impacts are properly attributable to their generating activity (in this case, the VFP), and, therefore, the total impact generated from an infusion of new income into an economy is the sum of the initial impact and the secondary impacts generated from it.

Secondary impacts cannot be directly observed and so most often are estimated through the development of multipliers, numbers which measure the strength of the secondary effects. In general, multipliers will be larger and secondary impacts will be greater in larger, more completely developed regional economies because spending is less apt to "leak" from the economy in these regions compared to less economically developed areas.

A single income multiplier, adapted from the Kansas Input-Output Model derived by Professor Jarvin Emerson of Kansas State University was used in this study. Emerson's multiplier is 1.84, and it applies specifically to eating and drinking establishments in Kansas. Given a multiplier, the total income (TI) created from an infusion of economic activity is merely the product of the direct impact (DI) and the income multiplier M_I, i.e.,

$$TI = DI \times M_I.$$

II. Estimated Economic Impact of the Kansas Vending Facilities Program

A. IMPACT UPON INCOME

The income data for the Vending Facilities Program used in this study were for FY 1978 through FY 1982, a time horizon consistent with the intent to smooth out any possible aberrations of one particular year while avoiding the influence of possible institutional changes over longer time periods. The direct income effect from the Program for each year is the net income (NI) generated by the program less any displacement effects. Table 1 contains NI (gross income – cost of goods sold) from the program in Kansas for FY 78-FY 82, while Table 2 presents calculations of the total income effect. Total income (TI) in 1978 (year 1) is merely $NI_{78} \times 1.84$, because of the initial steady-state assumption. For 1979, however, new net income (NI_{79}) created during that year must go through the adjustment process. Hence,

$$TI_{79} = [NI_{78} + (1 - 0.8)$$
$$NI_{79}] \times 1.84 = \$1,637,000.$$

The displacement effect for 1979 is $NI_{79} \times 0.8 = \$74,200$.

Total income created for 1980 is found by expanding this procedure one additional step: NI_{79} goes through phase 2 of the adjustment process, and NI_{80} goes through phase 1. Hence,

$$TI_{80} = [NI_{78} + (1 - 0.6)\ NI_{79} +$$
$$(1 - 0.8)\ NI_{80}] \times 1.84 = \$1,768,000,$$

and the displaced income for FY 80 is $0.6 \times NI_{79} + 0.8 \times NI_{80} = \$191,900$.

The table carries forward similar computations through FY 86. Those for FY 83-FY 86 assume no new expansion of NI from the Program during these years. Total income created continues to grow, though, as the displacement effect continues to decay.

Summing up the Program's income impact over the five-year interval obtains $8,916,000 dollars in new total income created. Over the nine-year interval from 1978-86, the figure is $17,466,000.

Total combined state and federal outlays to fund the Program over this period totaled $1,077,606. Therefore, it is estimated that, overall, this Program yielded $7,838,394 in benefits net of cost over the 1978-82 period or, viewed alternatively, that the Program's benefit/cost ratio is about 8.27. Two caveats must be made concerning this result, however. First, it is based upon the assumption that the blind workers did not contribute to the level of economic activity prior to the Program, and, secondly, it incorporates on the cost side only the expenditures made on the Program from 1978-82. In the economic lexicon, these are the marginal expenditures, and they do not incorporate the fixed and infrastructural costs which initially went into establishing the Program. From an economic

Table 1

Net Income (Current Dollars) Earned in the Vending Facilities Program in Kansas

	FY 78	FY 79	FY 80	FY 81	FY 82
Gross Income (Total Sales from Vending Operations)	$1,977,077	$2,183,298	$2,561,459	$2,580,343	$2,613,130
Cost of Goods Sold	1,087,392	1,200,814	1,408,802	1,419,189	1,437,222
Net Income (Gross – Cost of Goods)	889,685	982,484	1,152,657	1,161,154	1,175,909

Table 2

Total Income Effect From the Vending Facilities Program (Thousands of Dollars)

Net Effect	1978	1979	1980	1981	1982	1983	1984	1985	1986
Effect of FY 1978 and Before	$1,637.0	$1,637.0	$1,637.0	$1,637.0	$1,637.0	$1,637.0	$1,637.0	$1,637.0	$1,637.0
Effect of FY 1979		34.2	68.4	102.5	136.6	170.8	170.8	170.8	170.8
Effect of FY 1980			62.6	125.1	187.9	250.5	313.2	313.2	313.2
Effect of FY 1981				3.1	6.3	9.4	12.5	15.6	15.6
Effect of FY 1982					5.4	10.8	16.2	21.6	27.0
Total	$1,637.0	$1,671.2	$1,768.0	$1,867.9	$1,973.2	$2,078.5	$2,149.7	$2,158.2	$2,163.6

perspective, however, these earlier costs are sunk costs and are no longer relevant for decision making. Hence, in judging the present economic viability of the Program, only marginal costs should be considered.

B. ESTIMATED IMPACT ON KANSAS EMPLOYMENT AND THE STATE AND FEDERAL BUDGETS

Estimation of the Program's impact on employment and fiscal variables is accomplished by exploiting the close relationship which exists between income and employment *and* income and tax collections. For example, an employment multiplier for Kansas, M_E, can be estimated simply as the ratio of total employment in the state to Kansas personal income, i.e.,

$$M_E = \frac{\text{Total Kansas employment}}{\text{Total Kansas personal income.}}$$

Although simple in form, this expression incorporates the fact that most personal income is created through employment and that, therefore, from year to year, the ratio should remain very stable, changing only due to higher salaries over time.

Given M_E, the estimated employment impact of the Vending Facilities Program for any year is that year's M_E times that year's total income effect. Annual tax collection multipliers for the Kansas retail sales tax, the Kansas income tax, and the U.S. income tax were derived in an analogous manner:

Retail sales tax:

$$M_R = \frac{\text{Kansas state-level retail sales collections}}{\text{Kansas personal income}}$$

State Income Tax:

$$M_{ST} = \frac{\text{Kansas state income tax collections}}{\text{Kansas personal income.}}$$

Federal income tax data for Kansas are not yet available for the years after 1980. Therefore, the 1980 multiplier was extended into the future. This fact, given the 1981 and 1982 tax cuts, probably overestimates the tax impact to some small extent:

Federal Income Tax:

$$M_{FT} = \frac{\text{Kansas federal income tax collections}}{\text{Kansas personal income.}}$$

Estimates for 1978-82 of the multipliers developed in this subsection are contained in Table 3. Table 4 contains the results from applying the constellation of multipliers to the annual total income effects derived in Table 2. The total number of jobs created in 1978 is estimated to be 102 with the total increasing to 118 in 1982 and eventually stabilizing at 128 in 1986 after the displacement effects have been completed.

New state revenue collections from the taxation of the sales and income generated by the Program were estimated to total $54,700 in 1978, to increase to $65,900 by 1982, and to stabilize at $72,300 by 1986. Finally, federal tax collections were enhanced by an estimated $137,800 in 1978, $175,400 in 1982, and $192,300 when the steady state is attained in 1986.

It should be reiterated that the 1983-86 estimates assume no changes in net income earned by the Program from the 1982 level. The changing estimates are due to the displacement effects. Also worth noting is that retail sales and tax collections are flow variables which can be summed over time to yield aggregate totals as is done in Table 5.

Employment, conversely, is a stock variable which should not be aggregated across years because, from year-to-year, basically the same jobs are being counted. Thus, it is only appropriate to say that about 128 new jobs will have been created by the Program.

The Program's specific impact on the state and federal budgets is detailed in Table 6. Costs to these governments from the Program are the annual training costs discussed above. These data were provided by the Kansas Services for the Blind and are listed in the top portion of Table 6 for each year from 1978-82. The benefits to government from the Program are the reduction and eventual elimination of transfer payments to those who work in the Program *and* the tax receipts from the income and sales generated by the Program.

The principal transfer payment to the blind comes from the federal government's social security fund. Although the blind also participate to some extent in other federal transfer programs, such as food stamps and Medicaid, as well as, perhaps, some state programs, no data were available to document participation levels, and, therefore, only the reduction in the social security cost was calculated. The estimated annual savings in terms of this program are listed in Table 6.

Note that the effect on governmental budgets due to displaced workers does not have to be considered in the present context. This conclusion follows from the assumption that 1978 represented a steady state (previous displaced workers had already been reassimilated) and from the fact that participation levels in the Program have been nearly unchanged since 1978.

Finally, net tax revenues generated by the Program are also reproduced in Table 6. The

Table 3
Economic Activity Multipliers for Kansas

	1978	1979	1980	1981	1982 and Beyond
Employment Multiplier	0.0625	0.0555	0.0517	0.0459	0.0429
Retail Sales Tax Multiplier	0.0176	0.0163	0.0158	0.0150	0.0146
State Income Tax Multiplier	0.0158	0.0150	0.0164	0.0156	0.0188
Federal Income Tax Multiplier	0.0842	0.0899	0.0899	0.0899	0.0899

Table 4
The Effect of the Vending Facilities Program on Other Economic Variables

	1978 (and before)	1979	1980	1981	1982	1983	1984	1985	1986
Employment Generated (Number of Jobs)	102	104	109	114	118	124	127	127	128
Taxes Generated in Thousands of Dollars[1]									
Retail Sales Tax	28.8	27.2	27.9	28.0	28.8	30.3	31.4	31.5	31.6
State Income Tax	25.9	25.1	29.0	29.1	37.1	39.1	40.4	40.6	40.7
State Total	54.7	52.3	56.9	57.1	65.9	69.4	71.8	72.1	72.3
Federal Income Tax	137.8	140.7	157.2	166.1	175.4	184.8	191.1	191.9	192.3

The Blind Vending Facilities Program in Kansas manifests positive economic effects at every involved level of the state and federal governments.

Table 5

Total Tax Revenues Derived from the Vending Facilities Program

	1978–82	1978–86
Kansas Retail Sales Tax	$140,700	$ 265,500
Kansas Income Tax	146,200	307,000
Total Kansas Tax	286,900	572,500
Federal Income Tax	777,200	1,537,300

Table 6

Net Effect of Vending Facilities Program on the State and Federal Government Budgets

	1978	1979	1980	1981	1982
Expenditures					
Kansas	41,224	11,923	0	0	4,143
Federal	119,472	257,788	253,018	206,431	183,607
Revenue Generated					
Kansas	54,700	52,300	56,900	57,100	65,900
Federal	137,800	140,700	157,200	166,100	175,400
Federal Expenditures Saved	152,600	175,400	194,900	191,500	180,000
Net Effect on State and Federal Government Budgets					
Kansas	13,476	40,377	56,900	57,100	61,757
Federal	170,928	58,312	99,082	151,169	171,793

net annual impact upon the federal budget is the increased tax revenues plus the reduced social security payment less the direct outlay to fund the Program. For the state, the estimated net budgetary effect is simply the tax revenues generated less the direct funding outlay.

Estimates of the annual net budgetary impact at the state and federal level are contained at the bottom of Table 6. Based upon the analysis presented in this study, the Program has a beneficial net impact upon both the federal and state budget for each of the years studied. The total savings from 1978-82 were estimated to be $229,610 for the state of Kansas and $651,284 for the federal government.

Thus, in conclusion, the Blind Vending Facilities Program in Kansas manifests positive economic effects at every involved level of the state and federal governments. The magnitude of those effects (or impacts) is testimony to the economic efficacy of the Program in terms of its return on cost and affords a striking illustration of how a public assistance program can be, as well, a program for public benefit. This conclusion is further affirmed by noting that the estimating methodology employed in this study was actually rather conservative. Thus, though the results are only estimates of value, they are moderate estimates and, quite possibly, underestimate the Program's actual contribution, particularly when one considers that this study has assessed only the Program's tangible benefits when, no doubt, it also generates significant intangible virtues.

Footnotes

[1] Robert Glass, Richard Sexton, and Michael Valk, "An Economic Impact Analysis of the Blind Vending Facilities Program in Kansas," Research Papers in Economics and Business, Institute for Economic and Business Research, November 1983.

[2] Funding for the study was provided by the Kansas Department of Social and Rehabilitation Services.

Research Note

Federal Expenditures in Fiscal Year 1983

A review of FY 1983 federal expenditures reveals several interesting, even provocative facts. For example, 46.77 percent of all federal funds distributed were direct payments to individuals and another 14.73 percent of those funds were wages and salaries (see Table 1). Combining these two categories yields 61.50 percent of federal funds distributed going directly to individuals, or, put another way, $428,483 million was paid by the federal government directly to individuals. This fact might help explain the difficulty in cutting the federal budget: it has created its own constituency. Table 1 outlines the breakdown of the federal distribution of funds. The rest of this note will analyze these categories in more detail.

Federal government procurement contracts and expenditures for wages and salaries are dominated by the Defense Department. The Defense Department accounts for $53.7 billion of the $102.6 billion the federal government pays in wages and salaries. Another $20 billion goes to the postal service for wages and salaries. That leaves only $28.9 billion for wages and salaries of all other programs. The Defense Department's dominance of procurement contracts is even larger. Of the $158.9 billion in federal procurement contracts in FY 83, $127 billion or fully 80 percent of all contracts came from the Defense Department.

One further fact of interest to Kansans concerning Defense Department spending: Kansas gets 1.24 percent of the Defense Department procurement contracts, representing 94 percent of all federal government procurement contracts in Kansas.

Federal government grants to state and local governments are spread more evenly throughout the federal bureaucracy. The Department of Health and Human Services dominates federal grants with a total of 36.8 billion. Other departments which distribute large sums in grants are the Transportation Department ($13.0 billion), the Department of Housing and Urban Development ($9.9 billion), the Department of Agriculture ($8.7 billion), and the Department of Education ($6.8 billion). Of the major areas of distributed federal funds (outlined in Table 1), grants to state and local governments represent the smallest portion of the federal pie coming to Kansas. Another interesting figure for Kansans is that only 0.86 percent of Department of Agriculture grants came to the state.

The list of federal programs which provide direct payments to individuals is enormous. Table 2 contains a partial listing of these programs and the amount distributed. The most important programs are Medicare and Social Security which represent 69 percent of

Table 1
Distribution of Federal Funds ($1,000,000)

	U.S.	Kansas	Kansas as a % of U.S.
Population (July, 1983 Est.)	233,981,000	2,425,000	1.04
Total Funds Distributed	696,780	7,124	1.02
Grants to State & Local Governments	92,712	763	0.82
Salaries and Wages	102,601	1,026	1.00
Direct Payments for Individuals	325,882	3,295	1.01
Procurement	158,929	1,676	1.05
Other Programs	16,656	364	2.19

Table 2
Federal Government Direct Payments for Individuals by Program ($1,000)

	U.S.	Kansas	Kansas as a % of U.S.
Total Direct Payments for Individuals	325,882,177	3,295,420	1.01
National Guaranteed Student Loan Interest Subsidies	2,115,961	22,860	1.08
Pell Grant Program	2,845,400	30,060	1.06
Lower Income Housing Assistance Payments	2,459,654	18,162	0.74
Social Insurance Payments for Railroad Workers	6,492,056	146,479	2.26
Federal Payments for Unemployment Compensation	6,664,626	6,512	0.10
Medicare			
Hospital Insurance	40,559,102	485,855	1.20
Medical Insurance	18,529,524	183,001	0.99
Social Security			
Disability Insurance	17,484,323	127,499	0.73
Retirement Insurance	112,872,342	1,287,582	1.14
Survivors Insurance	34,628,540	376,138	1.09
Veterans (Total)	14,900,190	132,910	0.89
Federal Retirement			
Military	14,885,898	142,927	0.96
Civilian	20,952,643	191,905	0.92
Food Stamps	11,061,102	70,698	0.64

Table 3
Federal Government Expenditures for Other Programs ($1,000)

	U.S.	Kansas	Kansas as a % of U.S.
Total Expenditures on Other Programs	16,655,914	364,098	2.19
Grants			
National Science Foundation	817,713	3,881	0.47
Department of Health and Human Services			
Major Research	1,448,951	7,924	0.55
Other	2,321,989	11,800	0.51
Direct Payments—Other than for Individuals			
Department of Agriculture			
Commodity Purchases	2,830,211	3,718	0.13
Cotton Payments	913,100		
Wheat Payments	967,452	132,741	13.72
Grain Reserve	963,343	78,412	8.14
Other	2,556,900	76,257	2.98

the total direct payments. One of the most striking features of Table 2 is the relatively "small" amounts of money which go to standard welfare programs such as food stamps and unemployment compensation compared to Medicare and Social Security or, even, to federal retirement programs.

Kansas received the largest proportion of federal expenditures in the catch-all category of other programs. (See Table 3 for a partial listing.) The reason, of course, is that some of the agricultural price support programs fall into this category. It is interesting to note that the Department of Agriculture, through direct payments, provides $8.23 billion in subsidies for products that this country already produces more than it uses or exports, whereas the National Science Foundation's total grant program is only $818 million, less than 10 percent of the direct payment programs for price subsidy. Table 4 contains a partial listing of federal loans and insurance programs. Again, the priorities indicated by the amounts spent on different programs present an interesting contrast to the supposed public concern about both education and the decline in the nation's industrial competitiveness.

The distribution of federal funds by state and territory also presents some interesting contrasts with the distribution of United States resident population by state and territory. For example, California has 10.6 percent of U.S. population but received 12.4 percent of the federal expenditures in FY 1983, while Texas, with 6.6 percent of U.S. population, only received 5.3 percent of federal expenditures. In the midwest region, Iowa has 1.2 percent of the U.S. population yet received only 0.9 percent of federal expenditures whereas Missouri, representing 2.1 percent of the U.S. population, received 2.7 percent of the federal expenditures. Kansas received approximately the same amount of federal expenditures for its proportion of U.S. population (see Table 1).

Robert Glass
Research Assistant
The Institute for Economic
and Business Research

Source:

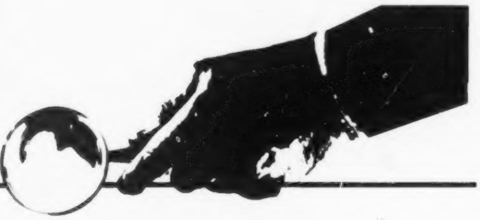
Bureau of the Census, Department of Commerce, *Federal Expenditures by State for Fiscal Year 1983*, March 1984.

Table 4
Federal Loans and Insurance Programs ($1,000)

	U.S.	Kansas	Kansas as a % of U.S.
Direct Loans	16,192,794	817,582	5.05
Commodity Loans-Price Support	13,753,944	799,377	5.81
Small Business	92,914	2,392	2.57
Guaranteed Loans	48,376,087	500,055	1.03
Farm Programs	3,760,332	77,158	2.05
Mortgage Home Insurance	11,844,768	64,392	0.54
Student Loans	6,968,575	92,999	1.33
Small Business	2,091,370	61,411	2.94
VA Home Loans	5,602,504	51,877	0.93
Rural Electric	4,589,457	58,087	1.27
Insurance	105,879,240	781,236	0.74
Crop	19,300,765	581,515	3.01
Flood	86,560,171	199,599	0.23

Economic Conditions

The National Review



Is the Recovery Too Strong?

The economic expansion continues to move along seemingly unimpeded. Real (inflation-adjusted) GNP grew an estimated 8.3 percent in the first quarter of 1984, the fifth consecutive quarter of sustained growth and the most rapid expansion recorded since the 9.7 percent mark in 1983:2. The economy's continuing vitality is surprising some experts who had predicted that the second year of recovery would be marked by decelerating growth rates. In fact, a number of analysts are beginning to seriously question whether the economy's surprising robustness is good news or whether it indicates that the nation is on an unsupportable growth path destined to lead to higher interest rates, inflation, and, eventually, recession.

These analysts note that inflation typically ratchets upward in the second stage of a recovery and that this tendency will be exacerbated if above average growth continues. Fear of resurging inflation, in turn, has caused the Federal Reserve to clamp down anew on the nation's money supply, putting further upward pressure on interest rates. In fact, growth in M1 (currency and checkable deposits), after rising at an 11.8 percent annualized rate during the first three quarters of 1983, slumped to only a 6.3 percent rate over the next six months. Whether this development is good or bad news depends on one's perspective: monetarists, fearing inflationary consequences, were alarmed at the double-digit rates recorded during 1983, but Reagan administration officials now are expressing concern that the new, restrictive policy will have a stultifying effect on the recovery.

Inflation and high interest rate fears, however, are much more broadly based than in merely a debate over the appropriate course of monetary policy. Many analysts see demand-side pressures rather than the Fed's credit controls as the primary culprit sustaining high interest rates and encouraging further increases. With nearly 200 billion dollar federal deficits apparently indelibly etched in the short-term economic blueprint, consumer installment credit and business investment loans remain as the principal demand-side variables in the credit markets. While the former has risen quite sharply during the recovery (14.5 percent from November 1982 to January 1984—see Figure 1), to fuel the well-documented consumer spending surge, the latter actually declined during the first year of recovery, and, as noted in Figure 1, has only recently begun to turn upward. Weak commercial and industrial loan demand to date has been the product of substantial excess capacity induced by the recession and surprisingly strong profits during 1983 which generated larger-than-anticipated internal funding sources.

However, many believe the recent upturn in business borrowing is an inevitable consequence of the rapid recovery and, when coupled with strong consumer loan demands and the codified credit requirements of the public sector, augurs further interest rate increases. In particular, it appears that the expansion is finally pushing capacity utilization rates in certain industries to the point where plant expansion and, consequently, increased loan activity must take place.

Indeed, recent evidence on capacity utilization in the nation's factories does offer some support for this interpretation. Although the overall utilization rate for March rose only 0.2 percent to 80.9 percent of capacity, as Table 1 notes, the rate for some sectors, e.g., utilities, primary processing manufacturing, nondurable materials, and energy materials, considerably exceeds the overall average. A prevailing rule of thumb is that capacity utilization rates near 83 percent trigger substantial plant expansion spending.

In addition to being affected by Federal Reserve monetary policy, the ability of the credit markets to absorb new financing demands from business will hinge critically upon whether the supply of funds generated by consumer savings begins to expand. Until now, the news in this area has not been positive. Consumers, on a post-recession spending binge, have reduced savings rates to recent historic lows. As Figure 2 indicates, savings levels in 1983 averaged less than 5.0 percent of personal income and were lower than at any previous time during this decade.

Some evidence does, however, indicate that the trend towards diminished savings may reverse in the upcoming quarters. In particular, the buying surge which has fueled the recovery to date may be waning (for example, March retail sales were down sharply), and households are, perhaps, beginning to turn their attention to replenishing reduced savings levels. Such a return to thrift on the part of households would be a fortuitous development in the face of burgeoning credit demands and tight credit controls.

Figure 1
Credit Market Activity in Recent Months

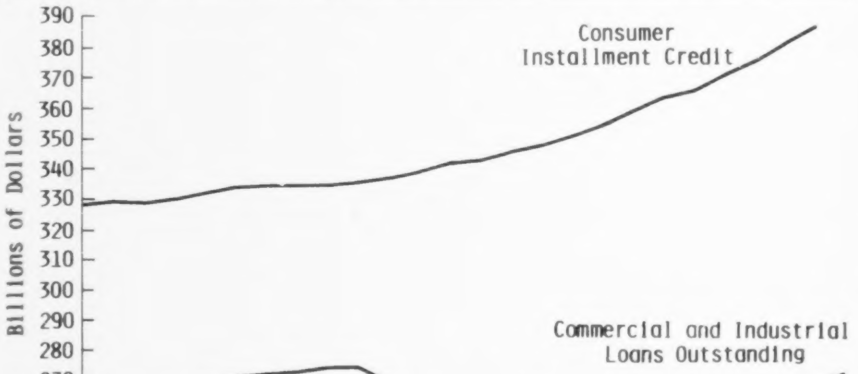


Table 1
Recent Plant Capacity Utilization Rates for Industry

Industry	March 1984 Utilization Rate
Total Industry	80.9
Mining	74.7
Utilities	83.4
Manufacturing	81.1
Primary processing	81.7
Advanced processing	80.8
Materials	81.9
Durable goods	80.7
Metal materials	71.3
Nondurable goods	82.4
Textile, paper & chemical	82.1
Paper	99.1[a]
Chemicals	77.4[a]
Energy materials	84.6

[a] February Rate

Source: *Federal Reserve Bulletin*, April 1984

Carried to its logical conclusion, the gloomy prognosis calls for inflation to rise into the 6.0 to 7.0 percent annualized range during the second half of 1984, with double-digit rates becoming a reality perhaps as early as 1985. Interest rates, which rose nearly one percentage point from February to mid-April on most intermediate term securities as well as the prime, are forecast by the less sanguine to rise another 1.5 to 2.0 percentage points before the end of 1984. If it comes to pass, this scenario would almost certainly sound a death knell for the recovery as early as mid-1985.

Evaluating the concerns being expressed about an overheating economy is no simple matter. The pessimists' arguments have a basis in economic logic and, as well, are bolstered by some statistical verification. Nonetheless, most mainstream economists, while recognizing the grounds for concern, believe that the fears are overstated at this time. In particular, more than one half of the first quarter growth was due to inventory accumulation, and domestic final sales grew only 4.9 percent in the first quarter—a more sustainable pace and one only 0.2 percentage points above the previous quarter. Moreover, with inventories back near desirable levels and with an expected lull in consumer spending, many forecasters expect the first quarter growth rate to be at the expense of markedly lower second quarter growth and the overall 1984 growth rate to come in near forecast levels.

Furthermore, inflation, though trending upward, has done so at a snail's pace thus far. As an example, the GNP deflator (a measure of overall price trends) has risen steadily over the past four quarters, but cumulatively the increases have only amounted to 1.1 percent higher inflation (3.3 percent in 1983:2 to 4.4 percent in 1984:1).

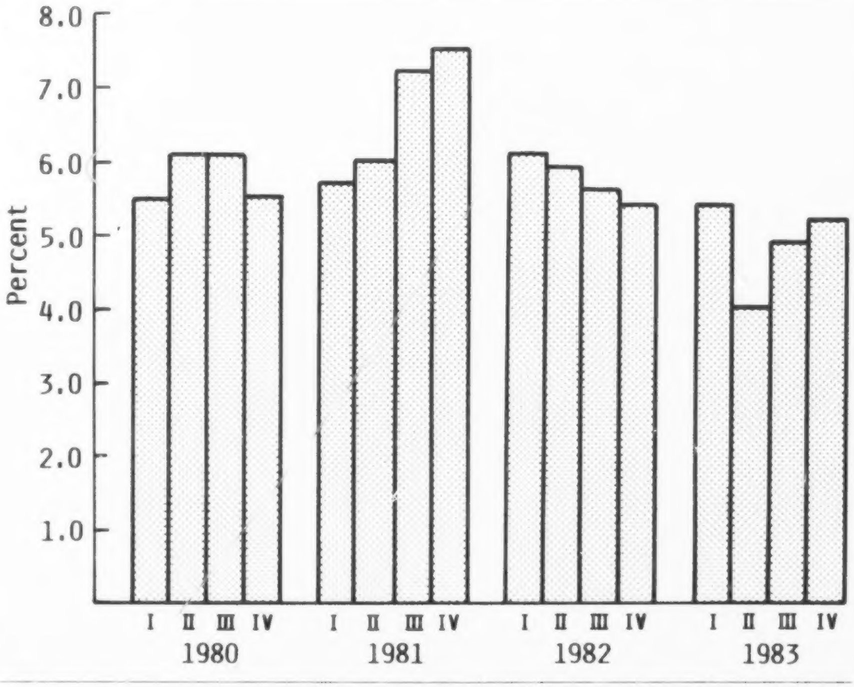
Producer prices, the supposed harbinger of future consumer price increases, have, however, been rising more rapidly. The index for finished goods, after rising only 0.7 percent for the year ending in November 1983, shot up to near a 5.0 percent annualized rate of increase over the next four months including a 0.5 percent jump in March.

To an important extent, though, the recent escalation in these prices is misleading because it has been based almost wholly in consumer food costs which are still reacting to tightening food supply conditions. In fact, for the three-month period ending in February, food costs at the producer level jumped 17.2 percent.

Because food prices as well as energy costs respond to stimuli peculiar to their own markets and are not particularly affected by business cycle conditions, these categories should be subtracted from the general index to get a more accurate barometer of the recovery's impact on producer inflation. Performing this step reveals that producer prices for goods other than food and energy rose at only a 2.7 percent annualized rate for November-February, only slightly above the 2.1 percent rate for the prior 12 months.

Moving back farther into the production chain and performing similar computations reveals a comparable pattern. Intermediate materials prices excluding food and energy rose an annualized 3.1 percent over November to February compared to 2.6 percent over the prior 12 months while nonfood or energy crude materials prices actually fell an an-

Figure 2
Personal Savings Rate (Percent of Disposable Personal Income)



nualized 8.7 percent during this three-month period, following a 14.3 percent increase for the prior year. Hence, although demand-induced inflation may yet appear in the production chain, to date its effect is barely discernable.

Finally, it would seem a sound bet that if the expected easing of growth pressures takes place over the next two quarters and if inflationary fears subside, pressures on interest rates should abate on both the demand and supply side. In particular, consumer and business borrowing pressures will be somewhat mitigated and the Federal Reserve may become more inclined to loosen the monetary spigot if it becomes satisfied that inflation is still in check.

Therefore, in reference to the question posed at the start of this section, the answer is: probably not yet. For the most part, excess capacity, both in terms of labor and physical plant, remains sufficient to accommodate further growth. The recent inflation upturn is due mainly to special factors in the major commodity markets, and little evidence of demand-side pressure on prices is evident to date. Interest rates do, however, remain high, and their level and prospective future course will probably continue to be the most debated economic topic over the next several months.

OTHER RECENT ECONOMIC DEVELOPMENTS

The economy does appear to have slowed in March from the juggernaut pace it maintained through February. Industrial production for the month rose at a modest annualized rate of 5.0 percent after jumping 15.8 percent over the previous 12 months. March employment rose by nearly one-quarter million workers, but, due to an inflow of persons into the labor force, the unemployment rate remained steady at 7.8 percent.

Housing starts were down sharply, 26.6 percent in March, reflecting bad weather, rising interest rates, and the fact that the 2.2 million annual rate attained in February simply could not be sustained. Still, the March 1984 figure was 2.9 percent above the year-ago value.

Reflecting the spring production slowdown, personal income in March rose only 0.5 percent, the lowest rate of increase in seven months. However, buoyed by stronger growth in January and February, personal income for the first quarter grew a healthy 13 percent at an annualized rate. Considering that consumer prices during this period rose at an annualized rate of only about 5.0 percent, the personal income figures translate into a strong increase in households' purchasing power.

Retail spending, following a 4.1 percent jump in January, declined in both February and March, but for the 12 months ending in February, sales were up a substantial 16.3 percent. Auto sales in March dropped as well to a 7.9 million annual pace compared to an 8.6 million rate in February. Even at this pace, however, demand remains strong, and sales continue to trend 25 percent above year-ago levels.

OUTLOOK

As noted, the growth pace should slacken in the second quarter, perhaps into the 4.0 percent range. With third and fourth quarter GNP pegged to grow in the 5.0 percent range, it now appears that real growth over all of 1984 will be near 5.5 percent, about a point higher than previously anticipated.

Business outlays on both inventories and investment should be strong over the next several months, but inventory spending may be stagnant in the current quarter. Consumers, meanwhile, are widely expected to relax their spending pace and to devote increasing portions of income to savings. Such predictions, however, have to date been erroneous, and, with an apparent reservoir of pent-up demand remaining, particularly for autos and housing, consumers may continue to lead the recovery, particularly if interest rates cooperate.

Civilian employment, which has now risen by almost five million workers since the nadir of the recession, will continue to grow, though more slowly than its pace to date. In addition, more rapid labor force growth will limit the economy's capacity to generate further declines in the unemployment rate. The Institute continues to expect unemployment to remain above 7.0 percent throughout 1984, although it may fall below the 7.5 percent mark previously forecast.

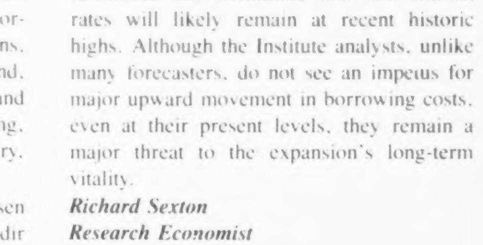
The Institute remains optimistic concerning prospects for inflation and interest rates. As noted in the initial section of this review, much of the upturn in prices to date is directly traceable to developments in major commodity markets, food in particular. With increased harvests in the offing, however, food price inflation should not exceed 5.0-5.5 percent during all of 1984. Energy prices, meanwhile, due to secular shifts in world consumption patterns, appear to be in for a relatively long-term period of moderation, barring major political upheaval.

Price changes for the rest of the economy will be more closely tied to the strength of the recovery but, throughout, will be moderated by the fact that unit labor costs, which rose only 2.0 percent during 1983, will continue a path of only very slow escalation throughout 1984. On the basis of this information, it does not appear unreasonable to expect consumer prices to rise no more than 4.0-5.0 percent during 1984.

Any easing of current inflation fears will have a positive impact on interest rates. Some slight declines in borrowing costs may be forthcoming during the second quarter due to reduced Treasury borrowing and the prospect of slower growth pace over this period. From a longer term perspective, however, no major reductions are imminent, and real interest rates will likely remain at recent historic highs. Although the Institute analysts, unlike many forecasters, do not see an impetus for major upward movement in borrowing costs, even at their present levels, they remain a major threat to the expansion's long-term vitality.

Richard Sexton
Research Economist
The Institute for Economic
and Business Research

The Kansas Economy



Centers of Growth in Kansas

In the last several issues of *KBR*, the effect of the past five years of national economic stagnation on the Kansas economy has been analyzed. However, in those analyses, one significant point has received only passing attention: the impact of the nationwide downturn has not been evenly distributed throughout the state. While the state as a whole has, indeed, experienced a slight decline in economic activity since 1979, several areas in Kansas have experienced economic growth. The following analysis will concentrate on the economic performance of the major economic centers in Kansas which are not SMSAs. In particular, this study will address those areas which have shown economic growth while the state's economy was declining.

Table 1 lists ten counties which are major

Table 1
Growth in Total Wage and Salary Employment (1979-1983)

	1979	1983	Percentage Change 1979 to 1983
Barton (Great Bend)	14,000	14,300	2.14
Crawford (Pittsburg)	13,200	12,825	-2.84
Ellis (Hays)	11,225	11,950	6.46
Finney (Garden City)	9,425	12,900	36.87
Ford (Dodge City)	9,800	10,575	7.91
Lyon (Emporia)	14,675	14,200	-3.24
Montgomery (Coffeyville)	17,775	14,225	-19.97
Reno (Hutchinson)	27,675	24,225	-12.47
Riley (Manhattan)	19,650	20,200	2.80
Saline (Salina)	22,875	21,725	-5.03
Kansas	946.8	915.5	-3.31
U.S.	89,886	89,978	0.10

Table 2
Growth in Employment by Industrial Sector (1979-1983)

	Barton (Great Bend)			Ellis (Hays)			Finney (Garden City)			Ford (Dodge City)		
Wage and Salary Employment	**1979**	**1983**	**% change 1979 to 1983**	**1979**	**1983**	**% change 1979 to 1983**	**1979**	**1983**	**% change 1979 to 1983**	**1979**	**1983**	**% change 1979 to 1983**
Total	14,000	14,300	2.14	11,225	11,950	6.46	9,425	12,900	36.87	9,800	10,575	7.91
Manufacturing	2,100	1,900	-9.52	1,400	1,200	-14.29	1,125	3,175	182.22	1,450	1,800	24.14
Mining	1,800	2,075	15.28	400	825	106.25	225	150	-33.33	25	75	200.00
Construction	675	650	-3.70	600	425	-29.17	700	1,275	82.14	675	500	-25.93
Transportation and Public Utilities	825	825	—	525	525	—	500	750	50.00	775	775	—
Wholesale Trade	1,150	1,225	6.52	500	500	—	950	750	-21.05	850	775	-8.82
Retail Trade	3,000	2,900	-3.33	2,475	2,725	10.06	1,875	2,100	12.00	2,175	2,500	14.94
Finance	525	525	—	400	475	18.75	400	450	12.50	425	400	-5.88
Services	2,250	2,425	7.78	2,275	2,475	8.79	1,975	2,475	25.32	1,675	1,800	7.46
Government	1,675	1,775	5.97	2,650	2,800	5.66	1,675	1,775	5.97	1,750	1,950	11.43
Unemployment Rate	2.1	4.7		2.4	3.0		2.9	3.4		1.9	3.4	

economic centers in Kansas along with their total wage and salary employment in 1979 and 1983 as well as the percentage change in employment over that time period. Of the ten counties listed, five sustained growth in wage and salary employment. The area growing the fastest was Garden City (Finney County), which grew 36.87 percent from 1979 to 1983. Of these five areas which grew during this period, four are located in western Kansas: Great Bend, Hays, Garden City, and Dodge City.

The growth patterns of the four western Kansas areas are of particular interest because of their diversity. Table 2 shows wage and salary employment by industrial sector, the unemployment rate for each of these areas in 1979 and 1983, and the percentage change from 1979 to 1983. The growth patterns of Hays and Dodge City are similar in that retail trade, services, and government employment all grew substantially. For Dodge City, retail trade and government employment growth were particularly strong. However, the growth pattern in these two areas also had their differences. In Dodge City, employment in manufacturing increased 24.14 percent whereas in Hays it fell 14.29 percent. In Hays, mining employment more than doubled; in Dodge City, the rate of growth was high, but the base was so low as to make the rate of growth irrelevant. Thus, a more accurate measure is the absolute growth in employment which for Hays was 425 and only 50 for Dodge City.

Great Bend, showing the lowest growth rate of the four areas, experienced moderate growth. The four industrial sectors that grew over this period—mining, wholesale trade, services, and government—all grew at rates between 5.97 percent and 15.28 percent. The fastest growing industry was mining, but the point should be made that this sector grew less in Great Bend than in Dodge City even though mining in Great Bend is a more dominant economic factor than in Dodge City. One final note about the Great Bend economy over these five years: its unemployment rate more than doubled, and its increase in unemployment was significantly more than in the other three areas.

The fastest growing area in the state for the past fifteen years has been Garden City. Its growth rate has been phenomenal for more than a decade, and, from 1979 to 1983, total wage and salary employment grew by 36.87 percent. During this period, the growth in manufacturing (182.22 percent) fueled the rest of the economy. However, even industries such as transportation and public utilities grew 50 percent while in the other areas employment remained constant.

This brief review of these four areas' growth patterns points out that there is no one, absolute pattern to economic growth and that for an area to grow it must emphasize its strongest resources. Also of interest is the growth rate of government employment in each of these areas. The growth rate in government employment ranged from 5.66 percent in Hays to 11.43 percent in Dodge City. In comparison, government employment grew only about 1.0 percent in Kansas during this period, and nationally during this period government employment fell slightly.

Robert Glass
Research Assistant
The Institute for Economic and Business Research

Agriculture

A Mixed Bag for Kansas

Economic news for Kansas' two major agricultural products shows the continuation of trends in opposite directions. Beef cattle prices in the state are averaging $2.00-3.00/cwt above year-ago levels and are over $5.00 above 1982 values. Wheat prices, however, continue to hover near the loan-rate support level.

Buoyed by improved profit margins caused by higher prices as well as by some amelioration of feeding costs in recent months, Kansas feedlot operators have begun to replenish inventories. Cattle on the state's feedlots on April 1 totaled 1,320,000 head, up 7.0 percent from March and 10 percent from a year ago.

Marketings from Kansas feedlots totaled 945,000 head during the first quarter, up 21 percent from a year ago, and, based on present inventory patterns, second quarter marketings should be substantially higher too—about 900,000 head, up 9.1 percent from last year.

Nationally, feedlot inventories are up as well, although the overall rate of increase is much less than in Kansas. In fact, when Kansas figures are subtracted from the totals for the 13 quarterly reporting states, April 1984 versus April 1983 growth is less than 1.0 percent. Second quarter marketings in the 13 states are expected to be up 163,000 head from last year, but nearly half of the increase will emanate from Kansas.

In spite of increased feedlot marketings, beef prices are expected to remain strong throughout 1984 and to trend well above levels established during the past three years. The reasons are twofold and they reflect basic demand/supply factors. On the demand side, the economy's continued ebullience will spark increased buying, especially for beef products. And, in respect to supply, higher fed cattle marketings for 1984 are apt to be more than offset by sharply reduced marketings of nonfed cattle, due to expected improvements in range conditions from their drought-ravaged 1983 state.

Total red meat production (beef, pork, lamb, and veal) is expected to be 38.0 million lbs. in 1984 compared to 38.9 million in 1983.

Mid-April fed cattle prices near the $70 level in western Kansas may not last, however, due to higher short-term marketings. On the other hand, the skewing of the supply mix towards higher proportions of fed cattle will bolster prices for range beef. Fed cattle prices should move in the $66 to $70 range through the spring and into the early summer and then settle into the mid-$60 during the second half of the year.

Feeder cattle and calf prices in Kansas have been depressed by high feed costs and, of late, have been selling at per-pound levels very comparable to those for fed cattle. Increased feedlot placements, though, should improve the feeder cattle demand outlook over the next several months, and it would not be surprising to see prices trend in the $69-$72 range into the summer months.

Utility cow prices, which plummeted to near $30 during the winter months should continue to exhibit major improvement as 1984 culling rates decline dramatically. Prices, which are currently near $44, may edge into the $46-$47 range by mid-summer.

Overall, the beef outlook spells good news for Kansas. Higher feedlot marketings should offset reduced sales of range beef, and total marketings in the state for 1984 are a good bet to exceed last year's production. This circumstance puts the state's ranchers in a good position to capitalize on reduced production and, hence, higher prices nationwide. Profit margins will continue to be squeezed by high feeding costs, but operators are mitigating these effects through more intensive mixing of low cost wheat into rations. All in all, chances are that 1984 will be the best year for Kansas ranchers since 1979.

As noted, however, the outlook for the state's wheat farmers remains clouded by a worldwide market glut: world wheat production for 1983-84 was 488 million metric tons, a new record in spite of a smaller U.S. harvest. The seven million metric ton increase from the 1982-83 record was attained principally due to improved harvests in China and Australia. In fact, China's 80 million metric ton harvest vaulted them past the U.S. and into a tie with the Soviet Union as the world's largest producers.

Due in part to increased production by competing countries and also due to the lagging foreign recovery and the strong dollar, U.S. wheat exports have been in decline and will comprise less than 40 percent of the world export market for the first time since the early 1970s.

Start of the year wheat stocks were lower nationally for 1984 for the first time since 1979 due to the lower domestic harvest. Table 1 provides further details on the U.S. and Kansas reserve for wheat and other grains important to the state. Kansas wheat stocks were actually above 1983 levels and were approximately equal to the amount of the 1983 state harvest. Similarly, the January 1 national stocks equaled about 97 percent of the 1983 U.S. harvest. Stocks of this magnitude naturally have a depressing influence on price and, coupled with intensifying international competition, insure that near-term prices will not move above the $3.50/bu. range.

Furthermore, longer term market conditions do not suggest future price improvements. Winter wheat seedings for harvest in 1984 totaled 25 million acres, up 2.5 million over last year and only a million below 1982's record planting. Reports to date indicate that the crop has come through the winter in relatively good shape with ample (if not too much) moisture present in most areas. In addition, farmers are planning to increase spring wheat acreage. Therefore, another bumper harvest may be in the offing in which case, barring major worldwide crop failures, prices for the 1984 harvest may fluctuate around the $3.50 level; that is, near the loan rate.

The Kansas winter wheat crop appears to have fared somewhat more poorly than the national average. Poor fall growing conditions, especially in western Kansas, and excessive spring moisture appear to have reduced yield potentials in several areas. Experts are currently guessing that the harvest will be in the low 400 million bushel range, well below 1982's 462 million bushel record. Over the past crop year, the impact of poor market conditions on wheat growers' income has been mitigated because nearly 90 percent of the Kansas acreage base was enrolled in the 1983 wheat program, thus making most of the crop eligible for target-pricing deficiency payments. Sign up for the 1984 program, however, has been much less dramatic due to a target-price cutback to $4.38/bu. and a much less attractive PIK package. Nationally, only about 53 percent of the acreage base is enrolled, so wheat growers' income this year will be much more dependent upon market conditions than last. Therefore, Kansas growers appear vulnerable to a double whammy—poor prices on top of a reduced harvest.

Table 1
Beginning of the Year Grain Stocks for the United States and Kansas

	U.S. Stocks in Thousands of Bushels			Kansas Stocks in Thousands of Bushels			
	1983	1984	Percent Change	1983	1984	Percent Change	Kansas Rank
All Wheat	2,520,709	2,324,548	7.8%	448,377	455,196	1.5%	1
Corn	8,284,244	4,928,479	40.5	123,504	74,887	39.4	12
Sorghum	810,453	650,548	19.7	247,320	200,859	18.9	1
Soybeans	1,803,927	1,290,702	28.4	42,607	24,767	41.8	12

Table 2
1984 Prospective Plantings for the United States and Kansas

	United States Thousands of Acres			Kansas Thousands of Acres		
	1983	Prospective 1984	Percent Change	1983	Prospective 1984	Percent Change
All Wheat	76,817	82,607	7.5%	13,200	13,500[a]	2.3%
Corn	60,194	81,766	35.8	1,100	1,000	−9.1
Sorghum	11,782	14,816	25.8	3,400	3,900	14.7
Soybeans	63,480	65,240	2.8	1,650	1,600	−3.0

[a] Estimated winter wheat acreage seeded.

Income in Kansas from other field crops will be higher in 1984, and, from an overall farm perspective, this development should ameliorate the income reduction forthcoming from the wheat market.

Actual planting information for spring crops will not be known for some time, but planting intentions have been announced and are listed in Table 2 for Kansas and the U.S. Nationally, major acreage increases are in the offing for corn and sorghum following the dismantling of the PIK program for those crops. Only minor increases are planned for soybeans because the 1983 base was not diminished by a PIK program.

Kansas farmers plan to push sorghum acreage upward nearly 15 percent to 1982 levels. In spite of prospects for high prices, preliminary intentions indicate a reduction in corn acreage, reflecting, perhaps, farmers' disillusionment following a pattern of subpar harvests. Soybean acreage is also projected to decline slightly.

Table 3 contains March prices for the major Kansas grains over the past two years. It quite graphically illustrates the sharp price improvement over that period for corn, grain sorghum, and soybeans, while during the same interval wheat prices have dropped nearly 10 percent.

Future price patterns for corn, soybeans, and sorghum are closely tied to the forthcoming harvest. Because stocks have been so sharply reduced, they will not be able to buffer prices from prevailing supply conditions in quite their usual fashion. Hence, inklings of poor crop conditions could send prices upward as early as late spring. However, if harvest prospects look good, prices will start to drift downward over the late spring and summer months. Even with a good harvest and lower prices, profit prospects for corn, sorghum, and soybeans will exceed those for wheat, especially for farmers outside the 1984 Farm Programs.

Based on 1984 planting intentions, combined acreage for corn, sorghum, and soybeans will amount to just under 50 percent of what has already been seeded in winter wheat. Hence, these crops have a limited ability to offset poor prospects in the wheat market. The value of the 1983 Kansas grain harvest (excluding sugar beets) was 2.77 billion dollars, down 12.6 percent from 1982's 3.17 billion dollar level. The reduction, of course, was primarily caused by poor wheat prices and drought-induced reductions in the harvest for other grains. With no price improvement projected for wheat and with the likelihood of a reduced 1984 harvest, preliminary indications are that the value of crop production in the state will fall once again in 1984, even with good harvests of other crops. Income from the 1984 crop will also be down due to less generous farm programs for the current year.

A summary view indicates that farm conditions in Kansas for 1984 will improve only slightly over last year's conditions. Beef earnings will definitely be up, and they may be augmented by improving conditions in the hog market as well. In terms of its percentile proportion, livestock accounts for about as much farm value as do the four major grains combined. Hence, the livestock sector will offset poor wheat market conditions, but overall farming gains for the state will be limited based on present prospects. And, due to its heavy reliance on wheat, Kansas agriculture will fare somewhat poorer relative to many other agriculturally-oriented states.

Richard Sexton
Research Economist
The Institute for Economic and Business Research

Table 3
March Prices for Major Kansas Grains

	1982	1983	1984	Percent Change from 1982
Wheat, bu.	$3.76	$3.63	$3.41	− 9.3%
Corn, bu.	2.54	2.94	3.14	23.6
Grain Sorghum, cut.	3.92	4.64	4.72	20.4
Soybeans, bu.	5.74	5.62	7.51	30.8

Economic Indicators

TABLE I. NATIONAL INDICATORS

INDICATORS			LATEST DATE	LATEST PERIOD	% CHANGE	% CHANGE YEAR AGO
A. INCOME MEASURES						
GROSS NATIONAL PRODUCT	BIL.'72$	(Q)	1ST	1,604.0	2.0	7.5
DISPOSABLE PERSONAL INCOME	BIL.'72$	(Q)	4TH	1,121.5	1.9	5.2
PERSONAL CONSUMPTION	BIL.'72$	(Q)	4TH	1,032.2	1.6	5.4
GROSS PRIVATE INVESTMENT	BIL.'72$	(Q)	4TH	245.2	6.3	37.4
NET EXPORT OF GOODS & SER.	BIL.'72$	(Q)	4TH	2.8	-75.4	-87.8
PERSONAL SAVINGS	BIL.'72$	(Q)	4TH	125.6	8.5	4.0
SAVINGS RATE*	%	(Q)	4TH	5.2	0.3	-0.2
B. LABOR FORCE						
CIVILIAN LABOR FORCE	MIL.	(M)	MAR.	112.9	0.2	2.0
EMPLOYED	MIL.	(M)	MAR.	104.1	0.2	4.9
UNEMPLOYED	MIL.	(M)	MAR.	8.8	-0.3	-23.1
UNEMPLOYMENT RATES* (seasonally adj.)						
ALL	%	(M)	MAR.	7.8	0.0	-2.5
MEN	%	(M)	MAR.	6.8	-0.2	-2.8
WOMEN	%	(M)	MAR.	6.9	0.0	-1.9
TEENS	%	(M)	MAR.	19.9	0.6	-3.6
BLACKS	%	(M)	MAR.	16.6	0.4	-3.3
WHITES	%	(M)	MAR.	6.7	0.0	-2.3
C. PRODUCTION						
INDUSTRIAL PRODUCTION		(M)	FEB.	159.9	1.2	15.9
HOUSING STARTS**	TH.	(M)	FEB.	1,915.0	14.9	7.9
D. PRICES						
1. CONSUMER PRICES (seasonally adj.)						
CPI-W, ALL ITEMS	1967=100	(M)	MAR.	303.3	0.0	3.5
CPI-U, ALL ITEMS	1967=100	(M)	MAR.	307.3	0.2	4.7
FOOD	1967=100	(M)	MAR.	302.2	0.0	[illegible].0
HOUSING	1967=100	(M)	MAR.	331.5	0.2	4.0
APPAREL	1967=100	(M)	MAR.	198.8	1.1	2.2
TRANSPORTATION	1967=100	(M)	MAR.	306.9	0.4	6.8
MEDICAL	1967=100	(M)	MAR.	374.5	0.3	6.3
2. PRODUCER PRICES						
ALL COMMODITIES	1967=100	(M)	MAR.	311.1	0.7	3.5
INDUSTRIAL COMMODITIES	1967=100	(M)	MAR.	321.9	0.5	2.6
CRUDE MATERIALS	1967=100	(M)	MAR.	337.7	2.0	5.5
CAPITAL EQUIPMENT	1967=100	(M)	MAR.	292.9	0.3	2.5
3. AGRICULTURAL PRICES						
PRICES RECEIVED	1977=100	(M)	APR.	146.0	0.7	7.4
PRICES PAID	1977=100	(M)	APR.	155.0	0.6	3.8
PARITY RATIO*	1977=100	(M)	APR.	88.0	0.0	3.5
E. BANKING AND FINANCE						
1. MONEY SUPPLY MEASURES						
M1	BIL.$	(W)	APR.2	532.2	0.7	7.4
2. MONEY SUPPLY COMPONENTS						
CURRENCY	BIL.$	(W)	APR.2	152.3	0.1	10.0
TOTAL CHECKABLE DEPOSITS	BIL.$	(W)	APR.2	374.9	-1.0	6.4
TOTAL TIME DEPOSITS	BIL.$	(W)	APR.2	721.4	0.2	4.3
3. INTEREST RATES*						
PRIME RATE	%	(W)	MAY 4	12.0	0.0	14.3
DISCOUNT RATE	%	(W)	MAY 4	9.0	0.0	5.9
FHA HOME MORTGAGE RATE	%	(M)	MAY 4	13.8	3.2	11.1
90 DAY CD'S	%	(W)	MAY 4	10.6	1.1	27.1
3 MONTH T-BILLS	%	(W)	MAY 4	9.7	0.6	20.8

*NUMBERS IN PERCENT CHANGE COLUMN INDICATE ABSOLUTE CHANGE OF THE INDICATOR

TABLE II. GENERAL BUSINESS INDICATORS FOR KANSAS

INDICATORS			LATEST DATE	LATEST PERIOD	% CHANGE	% CHANGE YEAR AGO
MANUFACTURING						
AVERAGE WORK WEEK	HRS.	(M)	MAR.	40.1	-0.2	3.4
AVERAGE WEEKLY EARNINGS	HRS.	(M)	MAR.	376.14	-1.3	5.4
INITIAL CLAIMS FOR UNEMPLOYMENT INSURANCE	TH.	(M)	MAR.	10,902.0	0.2	-30.9
NEW INCORPORATIONS						
IN-STATE FOR PROFIT		(M)	MAR.	435.0	1.4	39.4
OUT-OF-STATE FOR PROFIT		(M)	MAR.	126.0	-10.6	70.3

SOURCES: RESEARCH AND ANALYSIS SECTION
DIVISION OF STAFF SERVICES
KANSAS DEPARTMENT OF HUMAN RESOURCES
KANSAS SECRETARY OF STATE

TABLE III. EMPLOYMENT AND INCOME IN KANSAS

INDUSTRY			LATEST DATE	LATEST PERIOD	% CHANGE	% CHANGE YEAR AGO
ALL INDUSTRIES	TH.	(M)	MAR.	928.0	0.5	2.4
MANUFACTURING	TH.	(M)	MAR.	174.5	0.9	8.9
DURABLE GOODS	TH.	(M)	MAR.	106.2	1.4	13.1
STONE, CLAY, GLASS	TH.	(M)	MAR.	6.9	1.5	7.8
PRIMARY METALS	TH.	(M)	MAR.	2.6	4.0	18.2
FABRICATED MET. PROD.	TH.	(M)	MAR.	11.3	2.8	9.7
MACHINERY(INCL. ELEC.)	TH.	(M)	MAR.	28.0	1.5	9.4
TRANSPORTATION EQUIP.	TH.	(M)	MAR.	47.5	1.1	19.1
AIRCRAFT AND PARTS	TH.	(M)	MAR.	36.7	0.8	18.0
OTHER DURABLE GOODS	TH.	(M)	MAR.	9.9	1.0	4.2
NONDURABLE GOODS	TH.	(M)	MAR.	68.3	0.2	2.9
FOOD & KINDRED PROD.	TH.	(M)	MAR.	24.0	0.0	-0.8
MEAT PRODUCTS	TH.	(M)	MAR.	10.8	0.9	2.9
APPAREL	TH.	(M)	MAR.	3.6	-2.7	9.1
PRINTING & PUBLISHING	TH.	(M)	MAR.	17.6	1.2	2.3
CHEMICALS	TH.	(M)	MAR.	7.7	0.0	-4.9
PETROLEUM AND COAL	TH.	(M)	MAR.	4.2	2.4	7.7
OTHER NONDURABLE	TH.	(M)	MAR.	11.2	-0.9	15.5
MINING	TH.	(M)	MAR.	17.1	-1.7	1.9
OIL & GAS EXTRACTION	TH.	(M)	MAR.	15.6	-1.3	2.0
CONTRACT CONSTRUCTION	TH.	(M)	MAR.	37.2	3.1	1.9
TRANS, COMM, ELEC, GAS	TH.	(M)	MAR.	62.9	-0.2	3.5
WHOLESALE TRADE	TH.	(M)	MAR.	64.6	0.6	2.2
RETAIL TRADE	TH.	(M	MAR.	157.8	0.5	0.0

TABLE III. EMPLOYMENT AND INCOME IN KANSAS (CONT.)

FINANCE, INS., REAL EST.	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
SERVICES	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
FEDERAL GOVERNMENT	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
STATE & LOCAL GOVERNMENT	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
TOTAL PERSONAL INCOME*	MIL.$	[illegible]	4TH	[illegible]	[illegible]	[illegible]

SOURCES: RESEARCH AND ANALYSIS SECTION, DIVISION OF STATE SERVICES, KANSAS
DEPARTMENT OF HUMAN RESOURCES; BUREAU OF ECONOMIC ANALYSIS-
*BUREAU OF ECONOMIC ANALYSIS, DEPARTMENT OF COMMERCE

TABLE IV. CONSUMER PRICES--KANSAS CITY
CPI FOR ALL URBAN CONSUMERS (CPI-U)

CATEGORY		LATEST DATA	LATEST MONTHLY	% CHANGE	% CHANGE YEAR AGO
ALL ITEMS*	[illegible]	FEB.	[illegible]	[illegible]	[illegible]
FOOD AND BEVERAGE	[illegible]	FEB.	[illegible]	[illegible]	[illegible]
HOUSING	[illegible]	FEB.	[illegible]	[illegible]	[illegible]
APPAREL AND UPKEEP	[illegible]	FEB.	[illegible]	[illegible]	[illegible]
TRANSPORTATION	[illegible]	FEB.	[illegible]	[illegible]	[illegible]
MEDICAL CARE	[illegible]	FEB.	[illegible]	[illegible]	[illegible]

*ALL PERCENT CHANGES ARE FROM TWO MONTHS EARLIER.

SOURCE: BUREAU OF LABOR STATISTICS

TABLE V. EMPLOYMENT AND SALES DATA FOR KANSAS, STATE AND AREAS

AREA			LATEST DATA	LATEST MONTHLY	% CHANGE	% CHANGE YEAR AGO
KANSAS--STATEWIDE						
CIVILIAN LABOR FORCE	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
EMPLOYED	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
FARM	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
UNEMPLOYED	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
RATE*	%	1MO	MAR.	[illegible]	[illegible]	[illegible]
RETAIL SALES	MIL.$	1MO	FEB.	[illegible]	[illegible]	[illegible]
WICHITA SMSA						
CIVILIAN LABOR FORCE	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
EMPLOYED	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
FARM	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
UNEMPLOYED	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
RATE*	%	1MO	MAR.	[illegible]	[illegible]	[illegible]
RETAIL SALES	MIL.$	1MO	FEB.	[illegible]	[illegible]	[illegible]
KANSAS PORTION OF KANSAS CITY SMSA						
CIVILIAN LABOR FORCE	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
EMPLOYED	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
FARM	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
UNEMPLOYED	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
RATE*	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
RETAIL SALES	MIL.$	1MO	FEB.	[illegible]	[illegible]	[illegible]
TOPEKA SMSA						
CIVILIAN LABOR FORCE	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
EMPLOYED	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
FARM	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
UNEMPLOYED	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
RATE*	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
RETAIL SALES	MIL.$	1MO	MAR.	[illegible]	[illegible]	[illegible]

TABLE V. EMPLOYMENT AND SALES DATA FOR KANSAS, STATE AND AREAS (CONT.)

LAWRENCE SMSA						
CIVILIAN LABOR FORCE	TH.	1MO	MAR.	[illegible]	-0.3	-2.1
EMPLOYED	TH.	1MO	MAR.	33.3	0.0	-1.2
FARM	TH.	1MO	MAR.	[illegible]	16.7	0.0
UNEMPLOYED	TH.	1MO	MAR.	1.2	-7.7	-20.0
RATE*	TH.	1MO	MAR.	3.6	-5.3	-18.2
RETAIL SALES	MIL.$	1MO	FEB.	[illegible]	4.0	10.8
RILEY COUNTY--MANHATTAN AREA						
CIVILIAN LABOR FORCE	TH.	1MO	MAR.	22.1	-0.8	-0.8
EMPLOYED	TH.	1MO	MAR.	21.4	-0.7	-0.4
FARM	TH.	1MO	MAR.	8.8	9.4	-2.8
UNEMPLOYED	TH.	1MO	MAR.	0.8	-3.6	-12.9
RATE*	TH.	1MO	MAR.	[illegible]	[illegible]	-11.4
RETAIL SALES	MIL.$	1MO	FEB.	[illegible]	[illegible]	3.3
RENO COUNTY--HUTCHINSON AREA						
CIVILIAN LABOR FORCE	TH.	1MO	MAR.	[illegible]	0.6	-2.1
EMPLOYED	TH.	1MO	MAR.	[illegible]	0.2	0.8
FARM	TH.	1MO	MAR.	[illegible]	[illegible]	-3.2
UNEMPLOYED	TH.	1MO	MAR.	1.8	-7.8	-35.1
RATE*	TH.	1MO	MAR.	[illegible]	[illegible]	-35.1
RETAIL SALES	MIL.$	1MO	FEB.	[illegible]	[illegible]	[illegible]
CRAWFORD COUNTY--PITTSBURG AREA						
CIVILIAN LABOR FORCE	TH.	1MO	MAR.	[illegible]	[illegible]	-2.2
EMPLOYED	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
FARM	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
UNEMPLOYED	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
RATE*	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
RETAIL SALES	MIL.$	1MO	FEB.	[illegible]	[illegible]	[illegible]
LYON COUNTY--EMPORIA AREA						
CIVILIAN LABOR FORCE	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
EMPLOYED	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
FARM	TH.	1MO	MAR.	[illegible]	12.0	[illegible]
UNEMPLOYED	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
RATE*	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
RETAIL SALES	TH.	1MO	FEB.	[illegible]	[illegible]	[illegible]
SALINE COUNTY--SALINA AREA						
CIVILIAN LABOR FORCE	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
EMPLOYED	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
FARM	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
UNEMPLOYED	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
RATE*	TH.	1MO	MAR.	[illegible]	[illegible]	[illegible]
RETAIL SALES	MIL.$	1MO	FEB.	[illegible]	[illegible]	[illegible]
BARTON COUNTY--GREAT BEND AREA						
CIVILIAN LABOR FORCE	TH.	1MO	MAR.	[illegible]	0.1	[illegible]
EMPLOYED	TH.	1MO	MAR.	13.6	0.6	0.1
FARM	TH.	1MO	MAR.	0.8	6.9	-3.1
UNEMPLOYED	TH.	1MO	MAR.	0.6	[illegible]	-44.4
RATE*	TH.	1MO	MAR.	3.6	-8.1	-43.3
RETAIL SALES	MIL.$	1MO	FEB.	[illegible]	6.6	1.1
MONTGOMERY COUNTY--COFFEYVILLE AREA						
CIVILIAN LABOR FORCE	TH.	1MO	MAR.	18.6	-0.3	-4.5
EMPLOYED	TH.	1MO	MAR.	17.4	0.0	[illegible]
FARM	TH.	1MO	MAR.	[illegible]	[illegible]	-4.8
UNEMPLOYED	TH.	1MO	MAR.	1.2	-11.3	-36.9
RATE*	TH.	1MO	MAR.	6.3	-11.3	-33.0

TABLE V. EMPLOYMENT AND SALES DATA FOR KANSAS, STATE AND AREAS (CONT.)

RETAIL SALES MIL.$ (M) FEB. [illegible] [illegible] [illegible]

*ALL RATE CHANGES INDICATE ABSOLUTE CHANGES INSTEAD OF PERCENT

NOTE: ALL RETAIL SALES FIGURES ARE MONTHLY AVERAGES FOR THE PRIOR THREE MONTHS

SOURCES: RESEARCH AND ANALYSIS SECTION
DIVISION OF STATE SERVICES
KANSAS DEPARTMENT OF HUMAN RESOURCES
TAX RESEARCH SECTION
KANSAS DEPARTMENT OF REVENUE

TABLE VI. KANSAS AGRICULTURAL INDICATORS

INDICATORS		LATEST DATE	LATEST PERIOD	% CHANGE	% CHANGE YEAR AGO
PRICES RECEIVED					
ALL FARM PRODUCTS	[illegible] (M)	APR.	[illegible]	[illegible]	[illegible]
ALL CROPS	[illegible] (M)	APR.	[illegible]	[illegible]	[illegible]
WHEAT	[illegible] (M)	APR.	[illegible]	[illegible]	[illegible]
SORGHUM GRAIN	[illegible] (M)	APR.	[illegible]	[illegible]	[illegible]
CORN	[illegible] (M)	APR.	[illegible]	[illegible]	[illegible]
SOYBEANS	[illegible] (M)	APR.	[illegible]	[illegible]	[illegible]
ALL HAY	$/TON (M)	APR.	[illegible]	[illegible]	[illegible]
LIVESTOCK AND PRODUCTS	[illegible] (M)	APR.	[illegible]	[illegible]	[illegible]
ALL BEEF CATTLE	[illegible] (M)	APR.	[illegible]	[illegible]	[illegible]
STEERS AND HEIFERS	[illegible] (M)	APR.	[illegible]	[illegible]	[illegible]
CALVES	[illegible] (M)	APR.	[illegible]	[illegible]	[illegible]
HOGS	[illegible] (M)	APR.	[illegible]	[illegible]	[illegible]
MILK	[illegible] (M)	APR.	[illegible]	[illegible]	[illegible]
PRICES PAID					
[illegible]	[illegible] (M)	APR.	[illegible]	[illegible]	[illegible]
BEEF CATTLE [illegible]	[illegible]	APR.	[illegible]	[illegible]	[illegible]
MILK-FEED PRICE RATIO	(M)	APR.	[illegible]	[illegible]	[illegible]

SOURCES: FARM FINANCE, KCFRB
CROPS, KCRS
LIVESTOCK ON FEED, KCRS
BUREAU OF ECONOMIC ANALYSIS

TABLE VII. KANSAS [illegible] SUBJECT TO SALES TAX BY BUSINESS CLASSIFICATION*

BUSINESS CLASSIFICATION		LATEST DATE	LATEST PERIOD	% CHANGE	% CHANGE YEAR AGO
APPAREL	MIL.$ (M)	FEB.	[illegible]	[illegible]	[illegible]
AUTOMOTIVE	MIL.$ (M)	FEB.	[illegible]	[illegible]	[illegible]
FOOD	MIL.$ (M)	FEB.	[illegible]	[illegible]	[illegible]
FURNITURE	MIL.$ (M)	FEB.	[illegible]	[illegible]	[illegible]
GENERAL MERCHANDISE	MIL.$ (M)	FEB.	[illegible]	[illegible]	[illegible]
LUMBER & BUILDING MATERIALS	MIL.$ (M)	FEB.	[illegible]	[illegible]	[illegible]
PROF. & PERSONAL SERVICE	MIL.$ (M)	FEB.	[illegible]	[illegible]	[illegible]
PUBLIC UTILITIES	MIL.$ (M)	FEB.	[illegible]	[illegible]	[illegible]
UNCLASSIFIED	MIL.$ (M)	FEB.	[illegible]	[illegible]	[illegible]
FARM AND GARDEN PRODUCTS	MIL.$ (M)	FEB.	[illegible]	[illegible]	[illegible]
MANUFACTURING & TRADING	MIL.$ (M)	FEB.	[illegible]	[illegible]	[illegible]
MISCELLANEOUS	MIL.$ (M)	FEB.	[illegible]	[illegible]	[illegible]
TOTAL	MIL.$ (M)	FEB.	[illegible]	[illegible]	[illegible]

*ALL FIGURES ARE THE MONTHLY AVERAGES FOR THE PRIOR THREE MONTHS

SOURCES: TAX RESEARCH SECTION
KANSAS DEPARTMENT OF REVENUE

TABLE VIII. BANKING AND FINANCIAL ACTIVITY IN KANSAS

AREA		LATEST DATE	LATEST PERIOD	% CHANGE	% CHANGE YEAR AGO
MEMBER COMMERCIAL BANKS					
STATEWIDE					
TOTAL DEPOSITS	MIL.$ (M)	FEB.	14,2[illegible]	-0.2	11.2
TOTAL CHECKABLE	MIL.$ (M)	FEB.	4,[illegible]	-15.8	1.0
DEMAND DEPOSITS	MIL.$ (M)	FEB.	3,[illegible]	[illegible]	-9.5
OTHER CHECKABLE	MIL.$ (M)	FEB.	1,410.0	-3.4	13.8
SMALL TIME AND SAVINGS	MIL.$ (M)	FEB.	15,147.0	0.4	13.5
LARGE TIME	MIL.$ (M)	FEB.	3,203.0	3.0	17.4
AREA					
KANSAS CITY, KANSAS					
TOTAL LOANS	MIL.$ (M)	FEB.	747.0	-5.6	35.2
REAL ESTATE	MIL.$ (M)	FEB.	88.8	3.6	172.0
COMMERCIAL & INDUSTRIAL	MIL.$ (M)	FEB.	401.1	16.8	56.9
CONSUMER	MIL.$ (M)	FEB.	45.3	-4.3	10.8
TOTAL DEPOSITS	MIL.$ (M)	FEB.	896.4	-3.5	6.6
DEMAND DEPOSITS	MIL.$ (M)	FEB.	349.0	-6.0	-6.6
TIME AND SAVINGS	MIL.$ (M)	FEB.	555.1	-2.4	12.1
TOPEKA*					
TOTAL LOANS	MIL.$ (M)	FEB.	310.7	3.8	14.1
REAL ESTATE	MIL.$ (M)	FEB.	58.8	2.8	9.2
COMMERCIAL & INDUSTRIAL	MIL.$ (M)	FEB.	180.9	5.5	23.6
CONSUMER	MIL.$ (M)	FEB.	53.3	3.4	11.5
TOTAL DEPOSITS	MIL.$ (M)	FEB.	[illegible]	-2.3	4.8
DEMAND DEPOSITS	MIL.$ (M)	FEB.	115.8	-5.3	1.0
TIME AND SAVINGS	MIL.$ (M)	FEB.	387.7	-1.6	7.1
WICHITA*					
TOTAL LOANS	MIL.$ (M)	FEB.	1,003.7	-0.4	17.2
REAL ESTATE	MIL.$ (M)	FEB.	133.2	4.0	26.4
COMMERCIAL & INDUSTRIAL	MIL.$ (M)	FEB.	452.1	0.8	15.8
CONSUMER	MIL.$ (M)	FEB.	174.8	0.9	11.2
TOTAL DEPOSITS	MIL.$ (M)	FEB.	1,321.8	-1.5	8.6
DEMAND DEPOSITS	MIL.$ (M)	FEB.	428.8	-8.8	-1.5
TIME AND SAVINGS	MIL.$ (M)	FEB.	893.1	2.0	17.6
SAVINGS AND LOANS--STATEWIDE					
LOANS MADE	MIL.$ (M)	MAR.	119.4	13.1	33.6
NET GAIN IN SAVINGS**	MIL.$ (M)	MAR.	8.3	158.1	19.4
SAVINGS AND LOANS--CITIES					
KANSAS CITY, KANSAS					
LOANS MADE	MIL.$ (M)	MAR.	22.2	341.3	-2.6
NET GAIN IN SAVINGS**	MIL.$ (M)	MAR.	15.4	503.8	10.4
TOPEKA					
LOANS MADE	MIL.$ (M)	MAR.	20.7	59.2	8.2
NET GAIN IN SAVINGS**	MIL.$ (M)	MAR.	12.9	24.0	-40.8
WICHITA					
LOANS MADE	MIL.$ (M)	MAR.	29.0	46.5	8.2
NET GAIN IN SAVINGS**	MIL.$ (M)	MAR.	10.2	5,000.0	-4.7

*ONLY LARGE COMMERCIAL BANKS ARE INCLUDED.

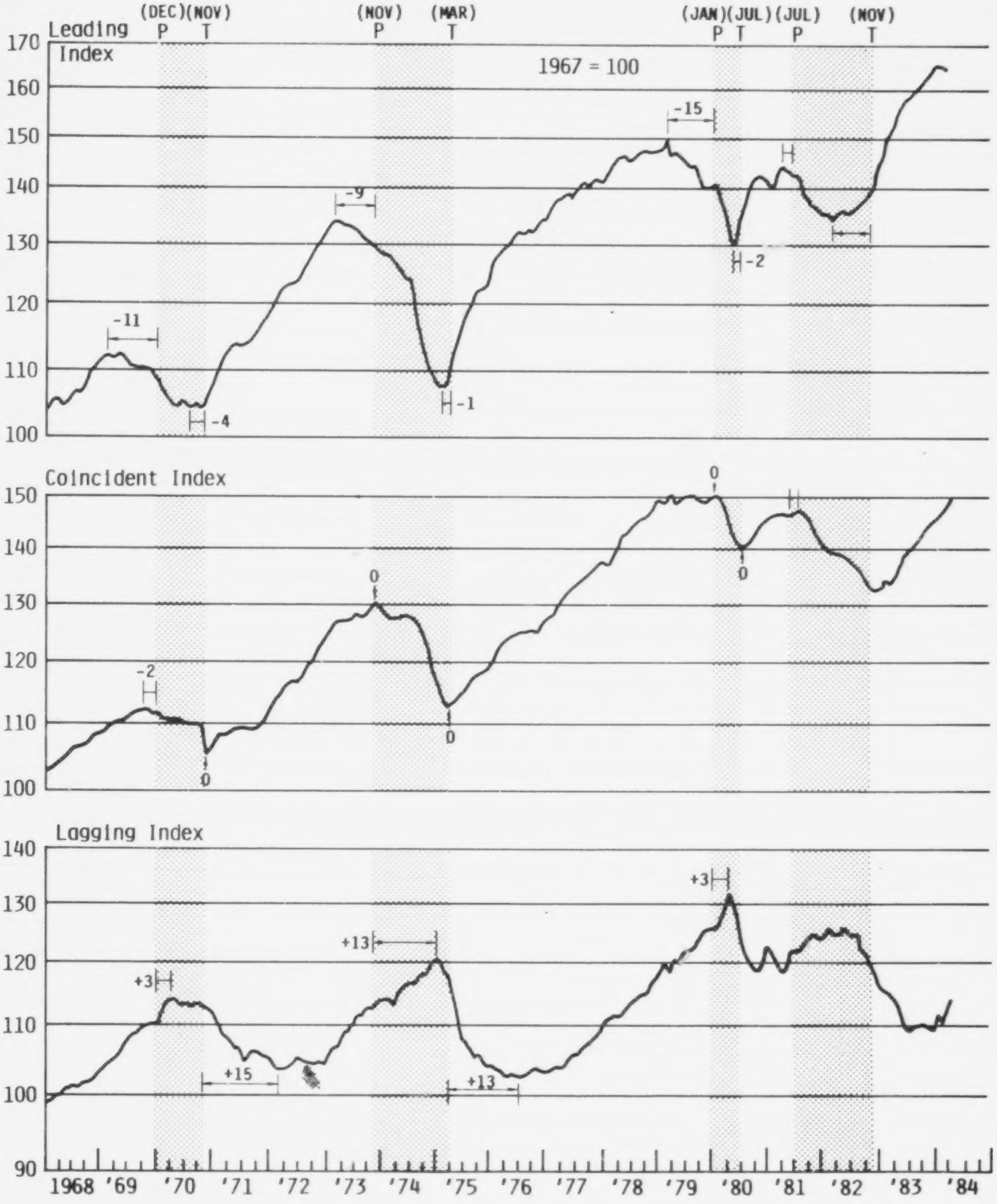
**NUMBERS IN PERCENT CHANGE COLUMNS INDICATE ABSOLUTE CHANGE.

TABLE IX. BANKING AND FINANCIAL ACTIVITY IN KANSAS*

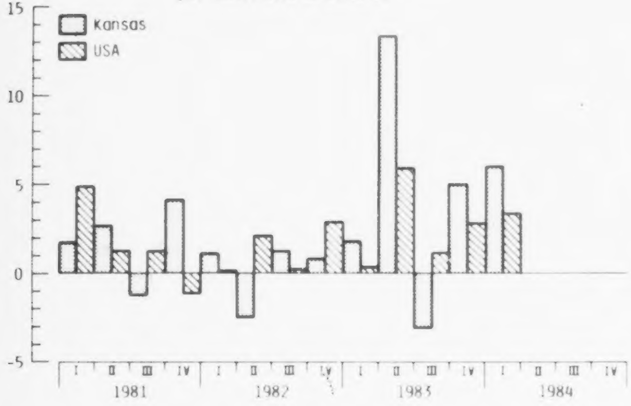
AREA		LATEST DATE	LATEST PERIOD	END OF [illegible] % CHANGE	[illegible] % CHANGE YEAR AGO
[illegible] STATEWIDE DATA					
STATEWIDE					
TOTAL LOANS	MIL.$	QTR 2ND '83	9,873.[illegible]	11.4	[illegible]
TOTAL DEPOSITS	MIL.$	QTR 2ND '83	16,85[illegible]	8.1	11.[illegible]
DEMAND DEPOSITS	MIL.$	QTR 2ND '83	3,1[illegible]	[illegible]	[illegible]
TIME AND SAVINGS	MIL.$	QTR 2ND '83	13,6[illegible]	[illegible]	[illegible]
KANSAS CITY, KANSAS					
TOTAL LOANS	MIL.$	QTR 2ND '83	1,683.8	11.[illegible]	14.8
REAL ESTATE	MIL.$	QTR 2ND '83	504.[illegible]	13.1	18.8
COMMERCIAL & INDUSTRIAL	MIL.$	QTR 2ND '83	377.0	14.8	10.1
CONSUMER	MIL.$	QTR 2ND '83	404.1	14.9	8.9
TOTAL DEPOSITS	MIL.$	QTR 2ND '83	2,612.8	11.8	15.1
DEMAND DEPOSITS	MIL.$	QTR 2ND '83	477.8	11.0	3.2
TIME AND SAVINGS	MIL.$	QTR 2ND '83	2,135.0	14.6	18.4
TOPEKA					
TOTAL LOANS	MIL.$	QTR 2ND '83	649.6	5.8	1.5
REAL ESTATE	MIL.$	QTR 2ND '83	155.8	6.1	11.1
COMMERCIAL & INDUSTRIAL	MIL.$	QTR 2ND '83	265.8	1.8	11.6
CONSUMER	MIL.$	QTR 2ND '83	126.8	7.8	4.1
TOTAL DEPOSITS	MIL.$	QTR 2ND '83	1,046.9	5.8	11.6
DEMAND DEPOSITS	MIL.$	QTR 2ND '83	248.7	4.3	7.1
TIME AND SAVINGS	MIL.$	QTR 2ND '83	797.[illegible]	6.6	14.1
WICHITA					
TOTAL LOANS	MIL.$	QTR 2ND '83	1,8[illegible]	5.8	8.4
REAL ESTATE	MIL.$	QTR 2ND '83	331.8	4.2	11.8
COMMERCIAL & INDUSTRIAL	MIL.$	QTR 2ND '83	[illegible]	[illegible]	[illegible]
CONSUMER	MIL.$	QTR 2ND '83	308.[illegible]	[illegible]	[illegible]
TOTAL DEPOSITS	MIL.$	QTR 2ND '83	2,[illegible]	[illegible]	16.[illegible]
DEMAND DEPOSITS	MIL.$	QTR 2ND '83	586.[illegible]	[illegible]	[illegible]
TIME AND SAVINGS	MIL.$	QTR 2ND '83	1,4[illegible]	[illegible]	[illegible]

*This table includes data for all those commercial banks in Kansas required to report transactions to the Federal Reserve or the FDIC. It represents, therefore, a much more comprehensive, but less timely, compilation than that reported in Table VIII.

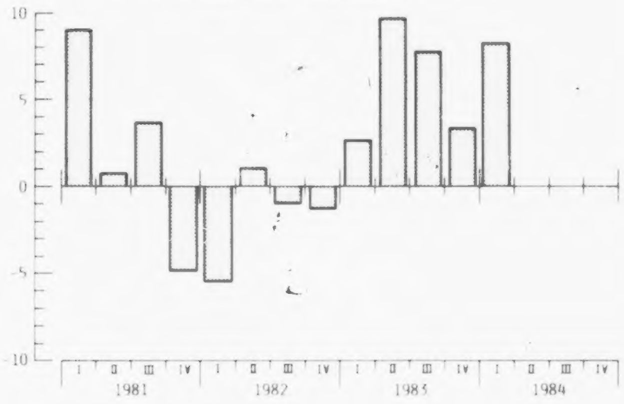
COMPOSITE INDEXES



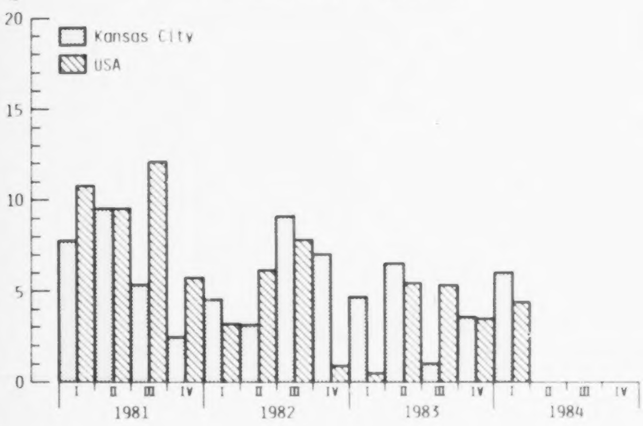
GROWTH OF RETAIL SALES
(In Current Dollars)



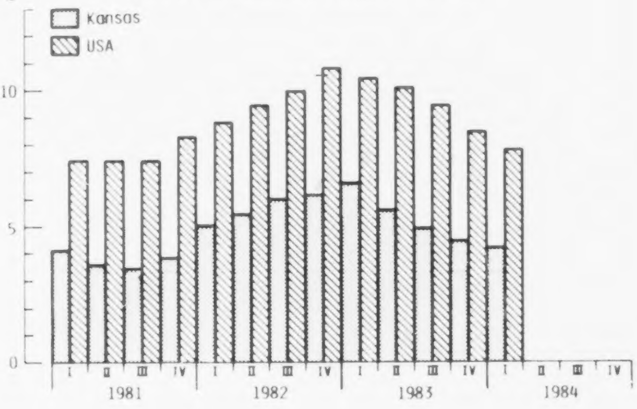
AVERAGE ANNUAL GROWTH RATE
OF GNP (1972 Dollars)



RATE OF INFLATION
(CPI-U, Seasonally Adjusted)



CIVILIAN UNEMPLOYMENT RATE



10/3/84 U7095-1(4) A

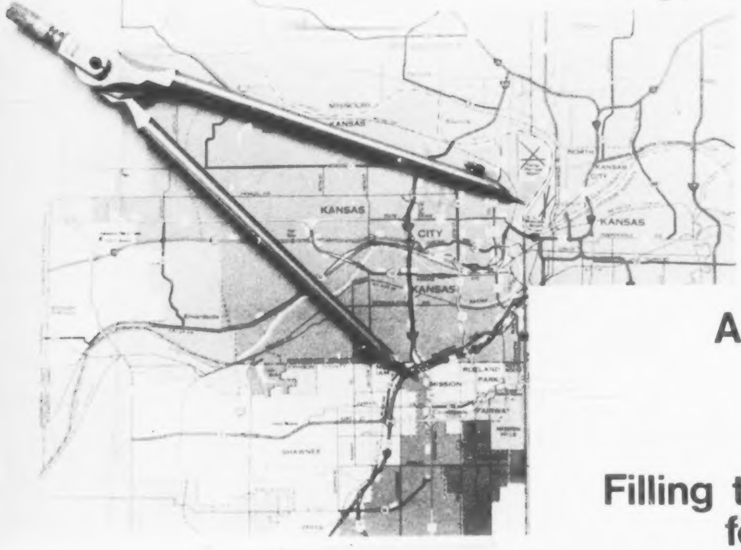
Vol. 7, No. 4
Summer 1984

KANSAS BUSINESS REVIEW

In this issue:

Travel To and Through Urban Centers in Kansas: The Kansas City, Kansas Experience

Richard Sexton
Robert Glass


MISSOURI
KANSAS
KANSAS
CITY
KANSAS
KANSAS
NORTH
MISSION
FAIRWAY
SHAWNEE

A Demographic Profile of Kansas Youth

Daniel L. Petree

Filling the Seed Capital Gap for Technology-Based Entrepreneurs

William E. Wetzel, Jr.

Economic Conditions
Economic Indicators

Institute for Economic and Business Research, The University of Kansas

KANSAS BUSINESS REVIEW

Summer 1984
Vol. 7, No. 4

In This Issue **Page**

Travel To and Through Urban Centers in Kansas: The Kansas City, Kansas Experience 1
Richard Sexton
Robert Glass

A Demographic Profile of Kansas Youth 10
Daniel L. Petree

Filling the Seed Capital Gap for Technology-Based Entrepreneurs 27
William E. Wetzel, Jr.

Economic Conditions
The National Review 31
The Kansas Economy 32

Economic Indicators 36

Advisory Board of the Institute for Economic and Business Research—Mr. Edward Bruske, Executive Vice-President, Kansas Association for Commerce and Industry; Executive Vice Chancellor Robert Cobb; Vice Chancellor Frances Horowitz; Professor Anthony Redwood, Director, Institute for Economic and Business Research; Mr. Charles J. Schwartz, Secretary, Kansas Department of Economic Development; Dean John O. Tollefson, School of Business; Professor Thomas J. Weiss, Chairman, Department of Economics.

Editorial Staff—Professor Anthony Redwood, Director; Michael Valk, Editor; Richard Sexton, Research Economist.

Kansas Business Review (KBR) is published four times a year. *KBR* is published by the Institute for Economic and Business Research, 317 Raymond Nichols Hall, The University of Kansas, Lawrence, Kansas 66045. It is designed by the Division of Publications, Office of University Relations.

Manuscripts for publication in *Kansas Business Review* are solicited from readers and should be sent to the editors for consideration.

Opinions expressed in the articles are those of the author(s) and do not necessarily reflect those of The University of Kansas.

The Economic Outlook Conference: Kansas and the Nation—1985

October 26, 1984
The Kansas Union
The University of Kansas

Highlighting issues especially important this election year, the program for this year's conference will feature keynote addresses by two nationally known experts on economic policy and theory: Dr. Rudolph Penner, Director of the U.S. Congressional Budget Office, and Dr. Thomas Sargent, Professor of Economics at the University of Minnesota and Advisor to the Federal Reserve Board of Minnesota.

Also on the program will be sessions devoted to the state of the state's economy, and, as a special feature, panel sessions led by and composed of leading regional practitioners and scholars on the issues of the banking industry in Kansas and property taxation.

For further information, readers are encouraged to call the KU Institute for Economic and Business Research at 913-864-3123. Announcements describing the program and registration procedures in greater detail will soon be forthcoming.

Travel To and Through Urban Centers in Kansas: The Kansas City, Kansas Experience

Richard Sexton

Robert Glass

Richard Sexton and Robert Glass hold, respectively, the positions of Research Economist and Research Assistant at the University of Kansas Institute for Economic and Business Research.

Introduction

Even the most enthusiastic Kansas booster must acknowledge that certain intractable facts about the Sunflower State inhibit out-of-state and tourist travel to Kansas. For example, as a citizen of a Great Plains state, the Kansas enthusiast would have to admit that the many vacationers in search of snow-packed slopes and surf and sand will look elsewhere. It is unlikely, as well, that Kansas will have a tourist draw in the foreseeable future comparable to, say, Disneyworld. Nonetheless, as various state and local agencies maintain, tourism and travel to and through Kansas do, indeed, represent a significant economic activity in the state and one that, if enhanced, promises even greater economic rewards.

This article is addressed to the growing concern of state and local policymakers and planners in further developing and expanding travel to, through, and in their area. In particular, it reports the results of a study conducted by the Institute for Economic and Business Research which investigated the nature and magnitude of travel to and through the Kansas City, Kansas area and that developed estimates of the travel industry's impact on that community.[1]

A study of this kind can be relevant to a number of purposes. Primary among them is that a travel analysis can alert area policymakers and citizens alike to what an important but often unrecognized and under-exploited economic activity travel is for most urban centers. Its significance arises from the fact that cities represent dense concentrations of population and, thus, generate frequent visits to friends and relatives. Furthermore, urban areas function as travel nodes and, as such, are places where major transportation arteries come together. Also, these areas are focal points for commerce and industry as well as cultural and recreational activities, and, in turn, these factors occasion business-related travel and tourism. Given that cities, by virtue of their very character, act as stimulants for travel and given that travel is essentially an economic activity, the opportunity exists, therefore, for civic leaders to "supercharge" these innate catalytic properties and, thus, to enhance the economic life of the particular area.

In addition to fulfilling an educational purpose, this type of study can also serve as an important guide to promoting and expanding the local travel industry. Identifying the importance of various types of travel and pinpointing the travel-sensitive economic sectors make it possible to develop effective promotional packages and to target them towards specific travel types.

It should be noted, however, that the difficulty of collecting SMSA-specific data on travel precludes the *direct* application of this article's methodology to other locales in Kansas. Nevertheless, the methodology does indicate an appropriate approach which can be pursued by other jurisdictions wishing to replicate this manner of analysis. That approach would entail using state-level data exclusively (making the necessary adjustments to the particular area) or undertaking surveys of area travel-sensitive businesses and/or travelers coming to and passing through the area.

As noted, the scope of this article is limited to analyzing travel to and through the Kansas City, Kansas (KCK) area (unless otherwise noted, KCK and Wyandotte County are treated synonymously); travel originating in Kansas City is not considered. This narrowing of focus distinguishes this study from the travel analyses by the U.S. Travel Data Center (TDC) in Washington, D.C. and is the logical approach given that the study's primary interest is in measuring the magnitude of transient travel and assessing its impact on the local economy. This travel is of the sort which brings outside income into a local economy and, therefore, of the type which a community might wish to promote. Originating travel, on the other hand, represents a drain on the local economy because the traveler's money is expended for the most part outside the local area.

A. STRUCTURE OF THE REPORT

Studying the overall impact of travel on a specific economy should involve two principal steps: (1) developing estimates of the primary expenditures—those made by the travelers themselves—and (2) assessing the secondary impacts occasioned as the initial expenditures work their way through the local economy. The direct and secondary impacts as well as their generating methodology are discussed in detail in Sections I and II of this report. The methodological and theoretical framework is, however, summarized in this section for the benefit of readers who do not wish to delve into the study in detail. Section III develops estimates of the employment and tax effects generated by travel expenditures, and Section IV contains concluding observations.

B. SUMMARY METHODOLOGY AND THEORETICAL FRAMEWORK

The primary expenditures are best assessed

Tourism and travel to and through Kansas do, indeed, represent a significant economic activity in the state and one that, if enhanced, promises even greater economic rewards.

by surveying travelers and asking them to describe the nature of their travel (e.g., visits to friends and relatives, business, tourism, and conventioneering) and to account for their expenditures. To attain a satisfactory level of validity, this type of study should survey travelers by all modes of travel and, because travel is highly seasonal, should be carried out over an entire calendar year. Given the expense of such an undertaking, this approach often must be ruled out.

An alternative survey approach would be to canvass area businesses in the economy's travel-sensitive sectors. However, this approach is wrought with methodological difficulties for an urban area the size of Kansas City, Kansas. Moreover, aside from the problems in gaining disclosure of proprietary data, many enterprises have at best only vague notions concerning the portions of their receipts which may be travel related.

If the direct survey approach is unrealistic, the analyst must rely on other data sources. One approach would be to derive travel-related activities directly from published measures of economic activity such as sales tax collections and the *Economic Censuses*. However, for industries other than lodging (e.g., restaurants, service stations, and retail outlets), this approach faces the almost insurmountable obstacle of determining what percentages of total activity levels should be exclusively imputed to the travel industry. Furthermore, any approach based upon direct analysis of economic activity levels will not provide estimates of actual travel data such as the number of trips and number of person-nights spent in the study area.

The alternative approach employed in this study was to attain estimates of raw travel activity relevant to the study region and, by using monetary benchmarks, to convert these data into estimates of economic activity. The 1977 *National Travel Survey (NTS)* provided the generic source of travel data, with two components in particular being used. For travel *through* KCK to destinations elsewhere, state-level data for Kansas were used and converted to make them applicable to the Kansas City, Kansas area.[2] For travel *to* KCK, the 1977 *NTS* data on travel to the Kansas City Standard Metropolitan Statistical Area (KC SMSA) were used and similarly adapted.

Although this information is somewhat dated, it is the best presently available, and, because budgetary rescissions precluded undertaking a national travel survey for the 1982 *Census of Transportation*, it is the best which will be available for sometime unless a community is willing to commit substantial funds for a special study. To make the information more current, the *Survey* data were adjusted to reflect subsequent population changes and relative price movements.

The secondary expenditures, also known as the multiplier effects, derive from the simple observation that a dollar of expenditure becomes a dollar of gross income to its recipient(s). Some portion of this income immediately leaves the local area, e.g., a part may go to businesses outside the area and some will go to pay state and local taxes. The income which leaves the study area is known as leakage because it no longer contributes to the local economic base. However, the portion of the income created which does remain in the area will, when spent, create additional local income. In essence, then, the multiplier process describes the manner in which economic activity diffuses through an economy. The local expenditures generated from income created by direct expenditures are known as the secondary impacts of the generating activity. The magnitude of the secondary impacts is determined by the rate at which the income created by the initial expenditure leaks out of the local economy. The smaller the study area both geographically and economically, the more rapidly will expenditures leak out, and the smaller will be the multiplier effects.

Expenditures created through the multiplier process are properly attributed to the primary activity from which they developed. In the context of a travel study, the primary activities are the visits to friends and relatives, tourism, convention going, and so forth. Analyses which fail to account for the multiplier process seriously underestimate the extent of the economic activity generated by whatever primary activity is being studied.

Directly measuring the secondary impacts is realistically impossible; therefore, they must be estimated indirectly. The most common estimation method involves construction of a multiplier which is used to convert the primary impact into the total impact, i.e., the primary plus the secondary impacts.

A number of approaches exists for developing a regional multiplier. The one chosen for this study involves deriving the multipliers from an input-output model of the local economy. This technique is generally regarded as the superior approach to multiplier development, particularly in respect to travel-related studies.

I. The Direct Impact of Travel on the Kansas City, Kansas Area

A. THE *NATIONAL TRAVEL SURVEY*

The 1977 *NTS* provides statistical data on the volume of nonlocal travel to and through each of the states by the civilian population in 1977. For survey purposes, nonlocal travel was defined as any trip extending 100 miles or more from origin to destination. Because the *NTS* is the sole source of raw travel data for this study, its travel definition by necessity becomes the one carried forward throughout this study.

The *NTS* was based on a national probability sample of households selected from each state and the District of Columbia. Interviews were conducted with sample households to obtain information on the number of trips taken by household members, on the characteristics of those trips, and on the economic and social characteristics of traveling households.

The basic travel data reported in the *NTS* for travel to and through a region are number of household trips, number of person-trips (e.g., a household trip involving three persons constitutes three person-trips), number of person-nights spent on the trip, and number of person-nights spent at the destination.

B. PERSON-NIGHTS SPENT IN THE KANSAS CITY, KANSAS AREA AND TRAVEL-RELATED LODGING EXPENDITURES

According to *NTS* estimates, 10,164,000 person-nights were spent in the Kansas City SMSA (KC SMSA) in 1977 on trips for which the destination was the KC SMSA. Furthermore, 3,739,000 person-nights were spent in Kansas on trips for which the destination was in a state other than Kansas. The KC SMSA data were used to derive estimates for travel to the KCK area while the Kansas data were used to account for travel through the KCK area.

Travel nights may be spent in a variety of lodging accommodations, and the nature of the accommodation is a critical determinant of the amount of travel-related economic activity generated. For example, nights spent in commercial lodgings generate direct expenditures for the rental accommodations themselves and, most likely, for restaurant meals, sundries, and so forth. Conversely, nights spent in the homes of friends or relatives generate no direct lodging expenditures and probably involve smaller expenditures on meals as well.

Because the *NTS* data do not distinguish nights spent by accommodation, such information was imputed based on national percentages relating type of overnight accommodation to trip purpose, e.g., trips to visit friends or relatives involve a very high incidence of nights spent with friends or relatives, while business or convention travel nights are commonly spent in commercial lodging.

Tables 1 and 2, respectively, contain estimated person-nights spent in the KC SMSA on trips to Kansas City and in Kansas on trips to destinations outside the state stratified according to type of lodging accommodation.

For overnight trips to the KC SMSA, accommodations with friends and relatives are most important, comprising about 60 percent of total person-nights spent in the area. Commercial lodging accounts for about 35 percent of the total. For trips where the destination is other than Kansas, friends and relatives re-

Table 1
Estimated Person-Nights Spent in the KC SMSA on Trips to KC SMSA by Type of Accommodation and Trip Purpose: 1981-82

Purpose	Thousands of Person-Nights Spent Friends & Relatives	Rental Accommodations	Proportion of Person-Nights Spent in Rental Accommodations
Visit Friends & Relatives	4,839	529	0.0985
Business	479	834	0.7928
Convention	77	352	0.8204
Outdoor Recreation	18	60	0.7674
Entertainment	87	268	0.7556
Sightseeing	29	126	0.8140
Personal Affairs	468	175	0.2727
Shopping	3	4	0.4286
Other	102	207	0.6385
Total	6,102	3,555	

mains the most common type of accommodation (47.1 percent), but commercial accommodations increased somewhat in importance to 36.6 percent of the total. (The remaining steps in deriving travel-related expenditures by lodging class are all of a technical nature and are included in the original study; copies are available to interested readers upon request.)

In determining the levels of direct travel-related expenditures for lodging in the KCK area, nights spent with friends or relatives are not considered because, as noted, they do not contribute directly to the specific economic activity. Nights spent in the other accommodation classes do contribute, but the vacation home, etc. and camping classes are not significant in the KCK area.[3] Hence, the remaining economically important accommodation class is commercial lodging.

If interest lies in a substate or sub-SMSA area, as in the case of this study, the commercial lodging data must be disaggregated to the appropriate level. To derive Kansas City, Kansas estimates, the state and KC SMSA data were disaggregated based upon the lodging industry's importance in KCK relative to the broader regions. Based on most recent data, lodging industry (SIC Code 701) employment in KCK is about 5.84 percent of the state's total and 4.74 percent of lodging employment in the entire KC SMSA. It was assumed, therefore, that 5.84 percent of travel nights spent in Kansas on trips to destinations elsewhere were spent in KCK and that 4.74 percent of person nights spent in the KC SMSA on trips there were spent in KCK. In this manner, both destination and pass-through travel to the KCK area is accounted for.

Table 2
Estimated Person-Nights Spent in Kansas on Trips to Destinations Outside Kansas by Type of Accommodation and Trip Purpose: 1981-82

Purpose	Thousands of Person-Nights Spent Friends & Relatives	Rental Accommodations	In Own Cabin, Campsite, or Vacation Home	Public or Commercial Camping Site
Visit Friends & Relatives	1,340	147	17	20
Business	90	367	17	5
Convention	10	44	0	4
Outdoor Recreation	41	133	64	77
Entertainment	26	81	4	11
Sightseeing	113	502	13	108
Personal Affairs	109	41	15	3
Shopping	0	0	0	0
Other	26	52	27	10
Total	1,701	1,367	157	238

To convert nights spent in commercial lodging into a measure of monetary expenditure, the nights are broken down by room type (e.g., single, double, and numbers of additional persons according to the size of the traveling parties). To acount for changes in travel magnitudes since 1977, the data were adjusted to reflect population growth 1977-81 in the regions from which travel to and through Kansas emanates. This step produced a travel adjustment factor of 1.080 for travel to the KC SMSA and 1.072 for pass-through travel in the state.

Finally, given updated lodging accommodation figures broken down by type of room, the dollar impact can be estimated by multiplying the person-nights spent in each room type by a weighted average of room costs in the KCK area for 1981-82.

Table 3 summarizes these calculations. It was estimated that, in total, about $6,666,000 in travel-related lodging expenditures were made in the KCK area during the 1981-82 travel year.

C. MILES TRAVELED AND TRAVEL-RELATED TRANSPORTATION COSTS IN THE KANSAS CITY, KANSAS AREA

Aside from person-nights spent on travel-related activities, the other piece of raw travel information necessary to construct a travel-impact estimate is the number of miles traveled on these activities by transportation mode. This information is converted into expenditure figures using travel cost-per-mile estimates for the various transportation modes. Finally, these costs are allocated among the regions involved in the particular travel activity according to the proportion of total travel nights spent in each.

According to the *NTS*, 1,716,000 household trips were made to the KC SMSA in 1977. The automobile was the travel mode for 1,237,000 of these trips, while airline travel accounted for 387,000 household trips. Based on the mean distance for all trips to the KC SMSA, about 1.4 billion miles were traveled in total on these trips.

In order to accurately estimate the impact of

Table 3
Estimated Travel-Related Expenditures for Lodging in the KCK Area: 1981-82

	Average Room Cost	1981-82 Estimated Expenditure
Single Rooms	$36.53	$2,969,000
Double Rooms	43.88	2,563,000
Double Rooms with 1 Additional Person	50.02	1,006,000
Double Rooms with 2 Additional Persons	56.16	128,000
Total		$6,666,000

travel-related transportation expenditures on the KCK economy, it is necessary to consider travel through the area to destinations elsewhere (the so-called "travel-node" travel). This type of travel can be broken into two categories: trips wherein one or more nights are spent in the area and trips for which the traveler passes through the area but does not spend the night and may not stop.

According to the *NTS*, 1,038,000 household trips passed through Kansas in 1977 and spent one or more nights. The auto was the travel mode for 20.5 percent of these trips while airplanes accounted for 26.4 percent. Total person-nights on these trips were 3,739,000. Another 2,637,000 household trips passed through Kansas, but the travelers did not spend the night. If travel-node travel involves a night spent in the area, some local expenditures in addition to lodging will probably be made. However, there is less certainty regarding nonovernight, pass-through travel. Most of these travelers may not stop in a given study area (particularly a geographically small one such as an SMSA), and it is very difficult to estimate expenditures when stops are made.

Therefore, no expenditures were allocated from pass-through travel which did not involve an overnight stay. This type of resolution is imperfect, however, because some expenditures will accrue from this type of travel. For an important travel-node region such as Kansas City, they may even be somewhat important. Unfortunately, they are simply impossible to estimate with any degree of accuracy.

Table 4 reports travel-related transportation expenditures for Kansas City, Kansas for the 1981-82 travel year.[4] These expenditures consist principally of driving costs because the area has no commercial airport, and, therefore, most expenditures related to air travel to or through the area accrue to other parts of the Kansas City SMSA. The total annual expenditure in the area, for this travel-related cost, was estimated to be $6,764,000 with these monies primarily accruing to the area's gasoline service station industry (SIC 554).

D. TRAVEL-RELATED MEALS EXPENDITURES

Travel usually involves expenditures in eating and drinking establishments (SIC 58). However, as indicated earlier, the amount of the expenditure depends upon the traveler's type of lodging accommodation. Those staying in hotels or motels typically consume three restaurant meals per day, but those staying with friends or relatives consume only about 52 percent of the average expenditure for a hotel/motel guest. Given this information, the person-nights spent by accommodation data contained in Tables 1 and 2 can be used to estimate travel-related meal expenditures in the KCK area.

Estimated travel-related meals expenditures for the KCK area are reported by type of lodging accommodation in Table 5 for 1981-82 travel to the KC SMSA and for overnight

Table 4
Travel Mileage for KCK

Travel Mode	KCK Area Mileage in Thousands[a] 1977	KCK Area Mileage in Thousands[a] 1981	Variable Cost[b] Per Mile	1981-82 Travel-Related Transportation Expenditures
Trips to the KCSMSA				
Auto without Camper	35,276	38,063	0.130[c]	$4,948,000
Auto with Camper	955	1,030	0.169[d]	174,000
Bus	1,600	1,726	0.169[d]	292,000
Subtotal				$5,414,000
Overnight Trips through Kansas to Destinations Elsewhere				
Auto without Camper	6,848	7,342	0.130[c]	$ 954,000
Auto with Camper	1,851	1,985	0.169[d]	335,000
Bus	335	359	0.169[d]	61,000
Subtotal				$1,350,000
Grand Total				$6,764,000

[a] These figures represent travel-related mileage in the Kansas City, Kansas area for the purpose of computing travel expenditures. They need bear no relation to actual number of miles traveled in the area.

[b] Costs included are those for maintenance, accessories, parts, tires, gas, oil, parking and tolls. Data are from: Office of Highway Planning, Highway Statistics Division, Federal Highway Administration, "Cost of Owning and Operating Automobiles and Vans in 1982." U.S. Department of Transportation.

[c] Cost is for an intermediate-sized passenger car (empty weight between 3,000 and 3,500 lbs.).

[d] Cost is for a passenger van (empty weight less than 5,000 lbs.).

Table 5
Travel-Related Meals Expenditures for the KCK Area: 1981-82

	Meal Expenditure by Accommodation	
	Friends or Relatives	Rental Accommodation
Travel to Destinations in the KCSMSA	$3,927,000	$4,399,000
Overnight Travel to Destinations Elsewhere	902,000	1,345,000
Total Meal Expenditure by Accommodation	4,829,000	5,744,000
Total Wyandotte County Travel-Related Meals Expenditure	$10,573,000	

travel through Kansas to destinations elsewhere. According to the table, about $10,600,000 are spent in the KCK area on travel-related meals. Nearly 55 percent of these expenditures are made by persons staying in commercial lodging, and about 80 percent are made by those whose destination lies in the KC SMSA.[5]

E. ENTERTAINMENT AND RECREATION EXPENDITURES AND PURCHASES OF OTHER GOODS AND SERVICES

Travelers are significant users of an area's entertainment and recreational facilities, and they also make general purchases at retail outlets. Until recently, little has been known about the magnitude of these traveler expenditures. They cannot be readily estimated from raw travel information because no standard benchmarks, such as the three-meals-per-day criterion for food expenditures, exist to guide estimation methodologies.

A study of travel to and through the Minneapolis-St. Paul area by Blank and Petkovich provides, however, valuable insights into the nature and magnitude of these expenditures.[6] By directly surveying travelers, they adduced the expenditure pattern for travelers according to trip purpose. Among the important findings was that purchases of goods and services outside the immediate hospitality industry were a much more significant component of travel-related expenditures than previously thought.

The Minneapolis-St. Paul travel expenditure distribution was used to estimate entertainment and recreation *and* other goods and services expenditures in this study. Considerable similarity exists between the KC SMSA and the Minneapolis-St. Paul SMSA in terms of population, geographical size, and status as an important midwestern travel node.[7] Thus, there is good reason to expect that the expenditure pattern of travelers to and through the Minneapolis-St. Paul area closely approximates that of KC SMSA travelers.

On this basis, it was calculated that lodging, transportation, and food and beverages comprise about 61.1 percent of all direct travel-related expenditures in the Kansas City area. The remaining expenditure categories, entertainment and recreation *and* purchases of other goods and services, were estimated to comprise 7.8 and 31.1 percent, respectively. Because lodging, transportation, and food expenditures were directly estimated from the raw travel data, spending in the remaining categories can be estimated based on the ratio of that category's importance relative to the combined importance of the three generically estimated categories. Hence:

Entertainment/Recreation Expenditures =
7.83/61.07 × $24,004,000 = $3,077,000

and

Other Goods and Services Expenditures =
31.13/61.07 × $24,004,000 = $12,236,000,

where $24,004,000 is the aggregated direct travel-related expenditure for lodging, transportation, and food and beverages.

Based upon these estimates, purchases by travelers of goods and services outside the immediate hospitality industries comprise the single most important class of expenditures. They accrue in large part to either general merchandise stores (SIC 53) or to miscellaneous retail stores (SIC 59). Similarly, the industries which attract the traveler's entertainment and recreation expenditures are generally considered to be motion picture theaters (SIC 783) and amusement and recreational services (SIC 79).

F. SUMMARY OF DIRECT IMPACTS

Table 6 summarizes by industrial sector the amount of direct expenditures made by travelers to and through the Kansas City, Kansas area. Their total for 1981-82 was approximately $39,300,000.

II. The Indirect and Induced Impacts of Travel on the Kansas City, Kansas Area Economy

This section contains estimates of the secondary impacts generated from travel-related expenditures. These are the multiplier effects discussed in the Introduction. This section provides further elaboration on the derivation of travel multipliers for Kansas City, Kansas and, as noted, presents the estimation results based on their use.

A. DERIVATION OF THE MULTIPLIERS

Among the alternative techniques available to estimate travel multipliers, the Input-Output (I-O) method was chosen for this study. It is much less costly than survey techniques, and it can be configured to yield individual multipliers for each economic sector, thus adding accuracy and realism to the model.

Table 6
Direct Travel-Related Expenditures by Sector for the KCK Area: 1981-82

SIC	Industry	Estimated 1981-82 Expenditure
701	Lodging	$ 6,666,000
554	Gas Service Stations	6,764,000
58	Eating and Drinking Places	10,574,000
783	Motion Picture Theaters	3,077,000
77	Amusement & Recreation Services	
53	General Merchandise Stores	12,237,000
59	Miscellaneous Retail Stores	
	Total Direct Impact	$39,318,000

Table 7
The Wyandotte County I-O Coefficient Matrix

	Agriculture	Mining	Contract Construction	Manufacturing	Transportation and Other Public Utilities	Wholesale Trade	Eating and Drinking Places	Other Retail Trade	Insurance Finance and Real Est.	Hotels and Lodging Places	Amusements	Other Services
Ag.	0.0980	–	0.0005	0.0159	0.0004	0.0003	0.0075	0.0009	0.0009	0.0013	0.0118	0.0004
Mining	0.0009	0.0274	0.0049	0.0156	0.0212	–	–	–	–	0.0003	–	0.0001
Contract Const.	0.0068	0.0014	0.0003	0.0035	0.0308	0.0028	0.0037	0.0120	0.0439	0.0248	0.0149	0.0103
Mfg.	0.1387	0.0799	0.3524	0.3852	0.0568	0.0287	0.3398	0.0433	0.0122	0.0613	0.0296	0.1204
Trans. and Other Public Utilities	0.0256	0.0291	0.0298	0.0440	0.1433	0.0518	0.0346	0.0797	0.0169	0.0600	0.0249	0.0396
Wholesale Trade	0.0334	0.0126	0.0410	0.0325	0.0118	0.0181	0.0615	0.0133	0.0024	0.0090	0.0126	0.0175
Eating and Drinking Places	0.0005	0.0023	0.0030	0.0034	0.0033	0.0130		0.0068	0.0045	0.0031	0.0145	0.0077
Other Retail Trade	0.0018	0.0005	0.0292	0.0004	0.0021	0.0028		0.0031	0.0010	0.0029	0.0015	0.0022
Insurance, Finance and Real Est.	0.0543	0.0835	0.0098	0.0129	0.0258	0.0291	0.0417	0.1342	0.1040	0.1260	0.0672	0.0493
Hotels and Lodging Places	0.0002	0.0003	0.0001	0.0010	0.0004	0.0023		0.0002	0.0002	0.0001	0.0004	0.0021
Amusements				0.0001	0.0032	0.0001	0.0041	0.0002	0.0001		0.0732	0.0008
Other Services	0.0155	0.0217	0.0462	0.0293	0.0376	0.0763	0.0362	0.1233	0.0345	0.0832	0.0632	0.0657

Table 8
The Wyandotte County Sectoral Multiplier Matrix

	Agriculture	Mining	Contract Construction	Manufacturing	Transportation and Other Public Utilities	Wholesale Trade	Eating and Drinking Places	Other Retail Trade	Insurance Finance and Real Est.	Hotels and Lodging Places	Amusements	Other Services
Ag.	1.1137	0.0030	0.0112	0.0297	0.0035	0.0022	0.0191	0.0038	0.0025	0.0046	0.0163	0.0049
Mining	0.0068	1.0318	0.0167	0.0290	0.0285	0.0031	0.0115	0.0048	0.0020	0.0050	0.0028	0.0055
Contract Const.	0.0143	0.0085	1.0081	0.0117	0.0399	0.0085	0.0126	0.0251	0.0511	0.0362	0.0231	0.0174
Mfg.	0.2787	0.1569	0.6166	1.6735	0.1541	0.0886	0.5958	0.1369	0.0689	0.1592	0.1032	0.2401
Trans. and Other Public Utilities	0.0551	0.0488	0.0795	0.0963	1.1835	0.0733	0.0828	0.1139	0.0310	0.0898	0.0462	0.0677
Wholesale Trade	0.0496	0.0207	0.0665	0.0602	0.0231	1.0255	0.0865	0.0245	0.0089	0.0200	0.0223	0.0300
Eating and Drinking Places	0.0031	0.0041	0.0073	0.0076	0.0057	0.0149	1.0044	0.0100	0.0061	0.0059	0.0176	0.0102
Other Retail Trade	0.0030	0.0012	0.0304	-0.0016	0.0040	0.0036	0.0013	1.0047	0.0029	0.0047	0.0028	0.0033
Insurance, Finance and Real Est.	0.0783	0.1033	0.0363	0.0380	0.0449	0.0440	0.0676	0.1665	1.1226	0.1543	0.0921	0.0687
Hotels and Lodging Places	0.0007	0.0006	0.0011	0.0020	0.0008	0.0027	0.0010	0.0008	0.0004	1.0006	0.0008	0.0026
Amusements	0.0003	0.0003	0.0005	0.0006	0.0042	0.0005	0.0049	0.0008	0.0003	0.0005	1.0793	0.0013
Other Services	0.0378	0.0372	0.0841	0.0652	0.0598	0.0930	0.0723	0.1516	0.0489	0.1079	0.0859	1.0878

An I-O model is a structural description of the intricate flow of goods and services within a regional economy. In matrix form, it can be written as

$$AX + D = X, \qquad (1)$$

where D is final demand in the economy by sector, X is total output for the economy by sector; and A is the "coefficients" matrix which describes the I-O relationships among the various economic sectors. For example, an element a_{ij} of A indicates the output from sector i required as an input into sector j to produce a unit of output in j. Hence, AX is simply intermediate demand in the economy, and equation (1) merely states that the sum of intermediate demand and final demand must equal total output.

The key step in employing the I-O technique to estimate multipliers is construction of the coefficients matrix A. It can be accomplished in a number of ways, the best of which involves detailed survey analyses of area industries to directly assess the individual a_{ij} coefficients. This process is very expensive and has never been done for the Kansas City area economy. The alternative method employed in this study, known as the "location quotient" technique, involves deriving a regional coefficient matrix from the national coefficients matrix by comparing an industry's relative importance in the region to its relative importance in the nation.[8]

In estimating the A matrix, the hospitality industry is decomposed into four sectors: lodging (SIC 701), eating and drinking places (SIC 58), other retail trade (SICs 53, 554, and 59), and amusements (SICs 783 and 79). All other industries were aggregated to the one-digit SIC level. Table 7 depicts the estimated coefficients matrix for Wyandotte County.

Once the elements of the A matrix have been obtained, equation (1) can be algebraically manipulated to generate a matrix of multipliers.[9] The matrix so generated is given in Table 8.

The interpretation of the multipliers is perhaps best illustrated with an example. Column 10 in Table 8 contains multipliers for the lodging industry. Each coefficient in this column pertains to the lodging industry's impact upon the industry in whose row it lies, e.g., row 1 is agriculture, row 2 is mining, and so forth. Specifically, the lodging industry's impact on total output in sector j is the product of c_j and d_j, where c_j is the jth row element of the lodging column and d_j is final demand in industry j. The lodging industry's total impact on total output is found by summing impacts across the individual sectors.

B. ESTIMATION OF THE OVERALL IMPACT OF TRAVEL ON THE KANSAS CITY, KANSAS AREA ECONOMY

In the context of the present study, application of the multiplier analysis is designed to answer the question: Where would the KCK area economy be without travel-related spending? Answering this question and comparing the economy's actual state to its hypothetical, no travel-related expenditures state provide the desired measure of travel's overall impact on the area economy.

To accomplish these steps, the direct travel expenditures summarized in Table 6 are treated as exogenous demand-side injections into the KCK area economy. These expenditures, of course, generate new income and, in turn, additional expenditures as the travel-related injection works its way through the economy. The total economic impact on each major sector is estimated mathematically by multiplying the multiplier matrix in Table 8 by a row vector whose elements consist of the direct travel-related expenditures for each of the travel-sensitive sectors as described above and zeros for each nontravel-sensitive sector.[10]

Table 9
The Primary, Secondary, and Total Impacts of Travel on the KCK Area Economy by Major Sector: 1981-82

Industry Sector	Primary Impact	Secondary Impact	Total Impact
Agriculture	0	$ 355,000	$ 355,000
Mining	0	255,000	255,000
Contract Construction	0	922,000	922,000
Manufacturing	0	10,281,000	10,281,000
Transportation and Other Public Utilities	0	3,780,000	3,780,000
Wholesale Trade	0	1,582,000	1,582,000
Eating and Drinking Places	$10,574,000	273,000	10,874,000
Other Retail Trade	19,004,000	137,000	19,141,000
Insurance, Finance, and Real Estate	0	5,189,000	5,189,000
Hotels and Lodging Places	6,666,000	0	6,666,000
Amusements	3,077,000	211,000	3,288,000
Other Services	0	4,628,000	4,628,000
Totals	$39,318,000	$27,616,000	$66,934,000

The results derived from this methodology are reported in Table 9 which contains estimates of the primary, secondary, and total impacts of travel on each of the 12 economic sectors identified previously.[11] The direct impacts are those summarized in Table 6, although aggregated somewhat differently in Table 9 to fit the sectoral breakdown established for the multiplier derivation. The secondary impacts are those created as the direct impacts work their way through the area economy.

The total travel-related impact on output in the KCK area economy is estimated to be $66,934,000, consisting of the $39,318,000 primary impact and $27,616,000 in secondary effects. The secondary impacts, though very significant, are quite small relative to the direct effects. This result, however, is to be expected given the localized focus of this study which implies the opportunity for expenditures to leak rapidly from the study area into other parts of the KC SMSA and elsewhere.

The data in Table 9 demonstrate quite vividly that, through the multiplier process, the travel industry impacts upon every major industrial sector in the area economy. Most significantly affected is the manufacturing sector in which over 10 million dollars in additional output is created. Other significant beneficiaries of travel impact are insurance, finance, and real estate *and* other services wherein about 5.2 million and 4.6 million dollars, respectively, are created through the secondary impacts. Additional secondary impacts of important magnitude accrue to the transportation and other public utilities sector (3.8 million dollars) and to wholesale trade (1.6 million dollars). Broadly speaking, these dollars are those which flow to the area businesses which serve the hospitality industry and the hospitality industry's employees. This money may take the form of expanded sales in enterprises only tangentially related to the travel sector, or, in some cases, they may involve enterprises whose existence is derived from the travel industry and who would not exist in its absence.

III. Travel's Impact on Wages and Salaries, Employment, and Local Tax Collections in the Kansas City, Kansas Area

The KCK travel-related expenditures discussed in the previous sections also augment employment and salaries in the area and add to the local tax base. This section reports the labor force and fiscal impacts generated by travel.

Estimated wage and salary income and employment due to travel are reported by sector in Table 10. The wage and salary estimates are derived by applying labor's average share of total output in each industry to the total travel-related expenditure impacts by sector contained in Table 9.[12] As the table suggests, labor's share of income does vary significantly across sectors, ranging from only 30 percent in manufacturing to nearly 80 percent for some types of retail trade.

In total, an estimated $39,971,000 in KCK wages and salaries for 1981-82 were due to travel. As such, about 60 percent of the estimated total impact is reflected in wage and salary income.

Employment by sector due to travel is computed by dividing the wage and salary estimates by the 1981 average wage for each sector. Across all sectors, it is estimated that 4,201 Wyandotte County jobs are due to travel, about 7.1 percent of the total nongovernmental employment in the county. The bulk of these are in the travel-sensitive sectors such as other retail (1,361 jobs), eating and drinking places (957 jobs), and lodging (634 jobs). However, components of employment in sectors not closely related to the travel industry are nonetheless due to the indirect effects of travel, e.g., insurance, etc. (348 jobs), other services (261 jobs), and manufacturing (176 jobs).

The immediate fiscal impact of travel on KCK area governmental finance derives from two sources: (1) the one percent sales tax collected by both Kansas City, Kansas and Wyandotte County, and (2) the Kansas City, Kansas two percent bed tax.

When considering the travel-related sales tax collections, it is important to note that, of the sectoral impacts reported in Table 9, only those in lodging, eating and drinking places, other retail trade excluding gas service stations, and amusements are subject to the sales tax. Total travel-related expenditure subject to the tax is $33,182,000. Total travel-induced retail sales taxes for Wyandotte County are one percent of this figure or about $332,000.

Based upon the 1977 *Census of Retail Sales*, about 95 percent of Wyandotte County retail sales occurs in Kansas City. Therefore, the KCK travel-induced sales tax receipts for 1981-82 are $332,000 × 0.95 = $315,000. In total, then, travel generates about $647,000 in area sales tax receipts.

Travel-related bed tax receipts for Kansas City, Kansas are estimated at two percent of the $6,666,000 lodging expenditure. On this basis, the annual bed tax receipts estimate is $133,000.

Table 10
Travel's Impact on Wages and Salaries and Employment in the KCK Area: 1981-82

Industry Sector	Labor's Income Share	Travel-Related Wages & Salaries	1981 Average Wage	Travel-Related Employment
Agriculture	0.374	$ 133,000	$ 6,701	20
Mining	0.548	140,000	14,628	10
Contract Construction	0.459	423,000	22,296	19
Manufacturing	0.3613	3,715,000	21,138	176
Transportation and Other Public Utilities	0.606	2,291,000	21,139	108
Wholesale Trade	0.768	1,215,000	19,617	62
Eating and Drinking Places	0.432	4,680,000	4,892	957
Other Retail Trade	0.788	15,074,000	11,076	1,361
Insurance, Finance, and Real Estate	0.733	3,801,000	10,909	348
Hotels and Lodging Places	0.570	3,798,000	5,989	648
Amusements	0.523	1,720,000	7,028	245
Other Services	0.644	2,720,000	11,409	261
Total		$39,971,000		4,201

Summing the sales and bed tax receipts produces a total direct travel-induced tax collections estimate for Wyandotte County and Kansas City of $779,000. Because the travel industry creates expenditures and jobs, the existence of certain tangible property are also appropriately attributed to it. Therefore, some amount of property tax collections are properly due to travel, e.g., portions of those paid by sectors in the hospitality industry. However, the data to make the appropriate imputations are unavailable, and, hence, travel's property tax impacts cannot be estimated. Nonetheless, they should still be recognized.

IV. Summary and Concluding Observations

Most people would not consider the travel sector an important element of the Kansas City, Kansas area economy. This study has demonstrated, however, that such a view is erroneous and strongly implies, in turn, that other urban areas in the state are beneficiaries of far greater economic returns from travel than commonly acknowledged.

Specifically, for the KC SMSA in 1981, an estimated 1,716,000 household trips were made to destinations in the area. In addition, many travelers to other destinations stopped and made use of Kansas City facilities. These trips resulted in an estimated 182,000 person-nights spent in Kansas City, Kansas commercial lodging establihsments, which, then, generated approximately $6,666,000 in receipts to the lodging industry.

Additional traveler purchases for automotive services, food and drink, amusements, and other goods and services combined with the lodging receipts to generate a total of $39,300,000 in direct annual economic impact upon the Kansas City, Kansas area economy for 1981-82. These expenditures generated an estimated $27,600,000 in additional secondary spending to create a total annual travel impact on the area economy of about $66,900,000 for 1981-82. These expenditures, consequently, create about 4,200 area jobs. Travel's impact, although concentrated in the travel-sensitive hospitality industry, is spread by the multiplier process to all sectors in the economy.

All estimates of economic impact should be interpreted as suggesting appropriate orders of magnitude and not as exact calculations. Individual impact estimates may err on either the high or the low side with the prospect that such errors will offset when generating aggregate impacts. Overall, the estimates in this study are probably on the conservative side, in particular because no expenditures could be imputed to KCK for the potentially important category of nonovernight pass-through travel.

Across the entire Kansas City SMSA, it was estimated that 1.72 times as many travel-related person-nights are spent in the homes of friends or relatives as in commercial lodging. If this ratio holds in Kansas City, Kansas, about 182,000 × 1.72 = 312,000 person-nights would have been spent with friends or relatives in 1981 and 494,000 travel-related person-nights would have been spent in total. Because the expenditure estimates derived in this study are based on overnight travel, rough per person-night expenditure estimates can be generated by dividing person-nights into the expenditure totals.[13] By this method, an average person-night spent in Kansas City, Kansas resulted in $79.55 of spending based on 1981-82 prices. These monies would generate another $55.87 in secondary expenditures, making the 1981-82 total per person-night expenditure attributable to the average Kansas City, Kansas traveler a total of $135.24.[14]

As noted in the Introduction, these numbers should be useful to civic leaders across the state concerned with economic development. Most cities are interested in expanding their economic base, but oftentimes policies initiated to further this goal involve steps to persuade major corporate enterprises to locate facilities in the area. Success in these sorts of ventures has become increasingly problematic as overall economic growth has slowed and as more and more cities and states have entered the competition to attract "footloose" firms.

The message of this study is that an area's economy can be expanded by other means. One way highlighted herein is to encourage and facilitate travel to and through the area. Because tourism is only a small segment of overall travel, even those areas lacking sub-

The direct expenditures of 39.3 million dollars generated an estimated 27.6 million dollars in additional secondary spending to create a total annual travel impact on the KCK area economy of 66.9 million dollars for 1981-82.

Because tourism is only a small segment of overall travel, even those areas lacking substantial tourist attractions can still have a thriving travel-related industry by promoting other types of travel and by attracting pass-through travelers who are on their way to other destinations.

stantial tourist attractions can still have a thriving travel-related industry by promoting other types of travel and by attracting pass-through travelers who are on their way to other destinations.

This study's results indicate that a substantial reward accrues to those areas that successfully expand their travel base. For Kansas City, Kansas, the prize is an $80 infusion into the economy per person-night spent in the city which becomes magnified into over $135 in total spending that reaches every major sector in the economy.

Footnotes

[1] The study, "The Economic Impact of Travel To and Through the Kansas City, Kansas Area," from which this article is drawn, was funded by the Kansas City, Kansas Convention and Tourism Bureau. The authors wish to acknowledge the special support and help provided by the Bureau staff in the preparation of the report.

[2] U.S. Bureau of the Census, Census of Transportation 1977, *National Travel Survey: Travel During 1977*, U.S. Government Printing Office, 1979.

[3] No campsites are presently active in KCK, and the area probably contains very few vacation homes or private campsites.

[4] Disaggregation of state and SMSA data to KCK was once again based on the importance of the KCK lodging industry relative to the state and SMSA. The 1977 data also were updated to reflect population growth during the 1977-81 period.

[5] The steps taken to derive the estimates in Table 5 are as follows: 1981 person-nights spent in commercial lodging and with friends and relatives are each multiplied by the $19.46 average per-day meal cost (based on restaurant data contained in the *Mobil Travel Guide*), but the figure for guests of friends and relatives is multiplied by 0.52 to account for their lower propensity to consume restaurant meals. Finally, Wyandotte County estimates are based on the importance of the travel industry in the KCK area relative to the SMSA and the state.

[6] Blank, Uel and Michael Petkovich, "Minneapolis-St. Paul's Travel-Tourism: People, Dollars and Activities in the Metropolitan Area," October 1979; and Blank and Petkovich, "The Metropolitan Area: A Multifaceted Travel Destination Complex," in *Tourism Planning and Development Issues*, D. Hawkins, E. Shafer, and J. Rovelstad, eds., Washington, D.C., George Washington University Press, 1980.

[7] The KC SMSA covers 3,332 square miles compared to 4,609 in the Twin Cities SMSA. The Twin Cities area has a larger population as well, 2,113,553 compared to 1,327,106 in the KC SMSA. The population densities are quite similar, however, with the Twin Cities having 479 persons per square mile and the KC SMSA having 398.

[8] For more information on the derivation process, consult Morrison, W.I., and P. Smith, "Nonsurvey I-O Techniques at the Small Area Level: An Evaluation," *Journal of Regional Science*, 14, April 1974, 1-14.

[9] The algebraic steps are as follows: Factorize the X matrices in (1) to obtain

$$D = (I-A)X, \qquad (2)$$

where I is an identity matrix of appropriate dimension. Then invert (I-A) to obtain

$$X = DM, \qquad (3)$$

where $M = (I-A)^{-1}$ is the matrix of multipliers. Eq.(3) can be interpreted to state that the ultimate change in output, dX, due to an exogenous change in final demand, dD, is equal to MdD. In the context of this study, dD is the direct travel impacts summarized in Table 5.

[10] The derivation of the total impacts can be stated more precisely as follows: totally differentiate (3) to obtain

$$dX = dDM, \qquad (4)$$

where $dD_{(1 \times 12)}$ is the exogenous change in demand due to the injection of travel-related expenditures, and dX is the (12×1) column vector of total travel impacts found as the matrix produce dDM.

[11] It should be noted that one minor technical alteration was necessary in order to attain the results in Table 9. This step was necessitated due to a feedback effect of the hospitality industry upon itself which is inappropriate in the context of this study. If hospitality industry expenditures are to be treated as an exogenous injection into the Wyandotte economy, the feedback effects need to be filtered out. This was done by eliminating the secondary effects of hospitality on itself. The resulting reduction in secondary impacts is only about $203,000.

[12] The labor share figures are based on the U.S. Transactions Matrix. See Ritz, P., G. Roberts, and P. Young, "Dollar Value Tables for the 1972 Input-Output Study," *Survey of Current Business*, 59, April 1979, 51-72, for further details.

[13] The average amount of expenditure per traveler depends on the person's trip purpose. Those traveling to conventions or for business purposes are much more apt to use commercial lodging facilities and consume restaurant meals than those who travel on personal matters or to visit friends or relatives.

[14] Consumer prices to the end of 1983 have only risen about 8.0 percent from their 1981-82 average. Thus, the current per person-night expenditure average would be only slightly higher, about $11, than its 1981-82 value.

A Demographic Profile of Kansas Youth

Daniel L. Petree

Daniel Petree is a Research Assistant with the University of Kansas Institute for Economic and Business Research and a student in the Ph.D. program of the School of Business.

Introduction

"People make most of their investments in themselves when they are young, and to a large extent by forgoing current earnings. Observed earnings are therefore relatively low at early years, and they rise as investment declines and as returns on past investments are realized. The main reason why investment is undertaken mostly by the young is that they have a longer period over which they can receive returns on their investment."[1]

In a reasonably efficient economy, the youth population (individuals aged 14-24) should be making the highest levels of investment in human capital, and it follows that a good case can be made that strategies to assist this group's investment ought to be the central thrust of a cost-effective human resources development program. However, good programs will not follow from this "good case" unless policymakers are familiar with the demographic and socioeconomic characteristics of this population.

This article addresses the demographic characteristics of the Kansas youth population—its size, distribution, and sex and race composition—leaving the socioeconomic variables for a later examination.[2] This focus does not imply that strategies should be developed without considering socioeconomic characteristics or that the demographic aspects are more important. It means that this study provides part of the necessary information, that part which identifies the more strictly quantitative characteristics of the youth population in the state—the "what" and the "where"—rather than the more qualitative aspects—the "who" and "what they do and believe."

Given that the scope of the article is limited to the demographic data, its purpose is primarily descriptive rather than analytic. The basic methodology employed is to use data contained in the *U.S. Census of Population* for the years 1960, 1970, and 1980 to describe the size, geographic distribution, and sex and race composition of the Kansas youth population. For most descriptive categories (for instance, size), the approach is to compare the youth population in Kansas with that in the U.S. overall, as well as to determine trends and patterns over the 20-year period (1960-1980). Additionally, the Kansas data are disaggregated into urban and rural categories, as well as county-by-county and, in some cases, Standard Metropolitan Statistical Area (SMSA) breakdowns.

By virtue of using *Census* data, the information reported herein should reflect as nearly as possible actual (as opposed to estimated) population figures. However, while data problems associated with incomplete information are minimized, there remain certain data collection and interpretation inconsistencies which make it impossible to perform complete comparisons across time. Where these inconsistencies are significant, they are noted in the text.

One of the primary objectives of this study is to identify those characteristics of the Kansas youth population which have changed over time. Another is to focus on those characteristics of the Kansas youth population which differed significantly from those of the national youth population. A final objective is to pinpoint geographic differences in the distribution of Kansas youth and their specific characteristics within the state.

These objectives inform the discussions in the following sections. For example, Section I, which considers the size and distribution of Kansas youth in comparison to the U.S. youth population, emphasizes the differences between the two populations and is mainly concerned with identifying trends particular to the Kansas group. Section II, presenting data on sex composition for both the state and nation, focuses on the urban/rural and county-by-county patterns of sex distribution in Kansas. Similarly, Section III, upon noting that the level of racial deversity among young Kansans is far less than in the U.S. overall, primarily analyzes the geographic differences in racial composition by Kansas region and county.

The particular points of focus and emphasis considered in the body of the article are summarized in Section IV, "Conclusions and Policy Implications," in the hope that, by concentrating upon the distinctive features of the Kansas youth population, policymakers may tailor with greater precision programs serving this target group and that, by highlighting the atypical characteristics of the group, more effective services may be offered than would be the case if national or even statewide plans, goals, and programs simply were adopted across the state.

I. Youth in the U.S. and Kansas Populations: General Comparisons

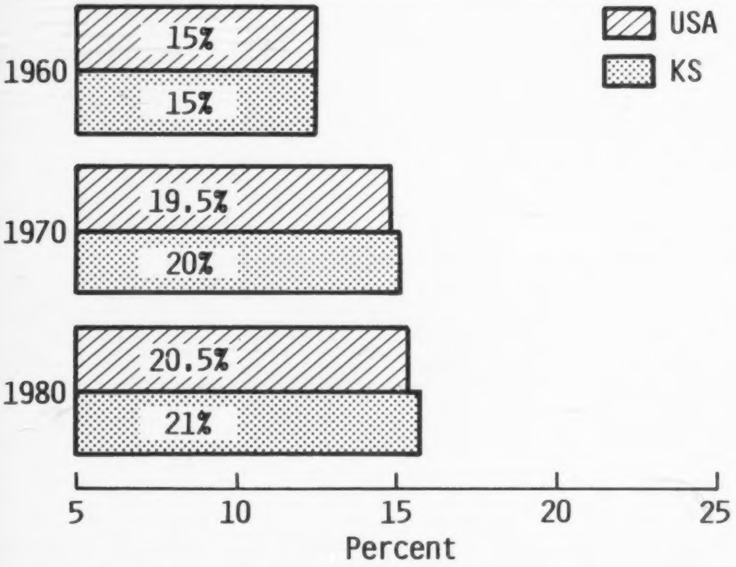
A. PROPORTION OF YOUTH IN THE U.S. AND KANSAS POPULATIONS

The proportion of youth in the Kansas population over the period 1960 to 1980 was essentially identical to that in the nation as a whole. For example, as Figure 1 clearly shows, in both the national and state populations the youth category increased as a percentage of the total population. In Kansas, 15% of the total population was in the 14-24 age group in 1960; by 1980, 21% of the population represented the youth category. Growth of the youth group nationally was very nearly the same, starting at 15% of the population in 1960 and rising to 20.5% in 1980.

However, several areas of differences between the two populations become apparent upon further analysis. By dividing the 20-year period into two 10-year subperiods (1960-1970 and 1970-1980) and the youth population into two age groups (teen youth, ages 14-17, and adult youth, ages 18-24), one can see some of the changes which occurred among the youth in the populations. For instance, the youth population increased by 48% in the U.S. during the first half of the period, but by only 18% during the second half. Increases in Kansas, on the other hand, were much slower:

Figure 1

Proportion of Youth in the Total Populations of U.S. and Kansas: 1960, 1970, and 1980



Source: Computed from *U.S. Census of Population.*

40% from 1960 to 1970 and only 7.0% from 1970 to 1980.

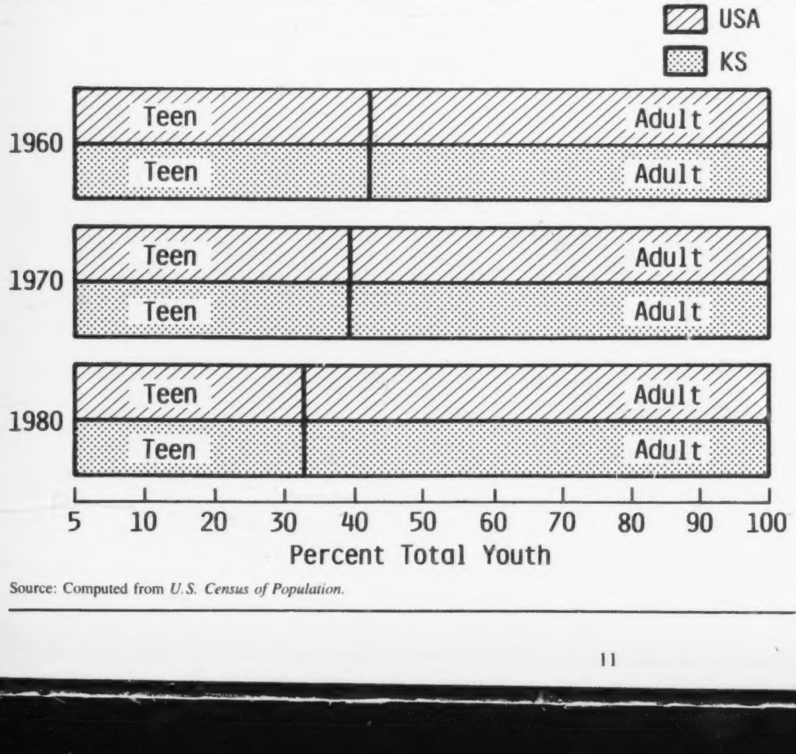
The youth population, both in the nation and in the state, increased more slowly in the latter half of the period, mirroring total population growth in the nation. Total Kansas population, however, actually increased faster during the second half of the period than during the first half. The result of the disparity was that by the middle of the period the proportion of youth in the Kansas population was 0.5% higher than the national rate. This relationship continued to the end of the period.

Figure 2, showing the proportion of total youth in the teen-age category compared with the proportion in the adult category for each census year, reveals that the teen component in Kansas decreased as the adult proportion increased. This trend appeared in the overall population as well. During the first decade of the period, the proportion of teen youth in the population rose by 2.0% both in the U.S. and in Kansas. This increase was followed by a 1.0% decline between 1970 and 1980 at both the state and national level.

Concurrently, the adult youth proportion of the population rose sharply, from 9.0% to 14% in Kansas and 9.0% to 13% nationally, over the entire period. So by 1980, not only did the Kansas population contain a slightly higher proportion of youth than did the U.S. population, but there was also a higher percentage of adult youth in Kansas than in the U.S. The population of Kansas and the U.S. were aging during the latter half of the period, with clear evidence of the trend continuing as the youth population itself ages.

Figure 2

Proportion of Total Youth in Teen and Adult Youth Subgroups in U.S. and Kansas: 1960, 1970, and 1980



Source: Computed from *U.S. Census of Population.*

B. ANALYSIS OF THE URBAN/RURAL DISTRIBUTION OF YOUTH

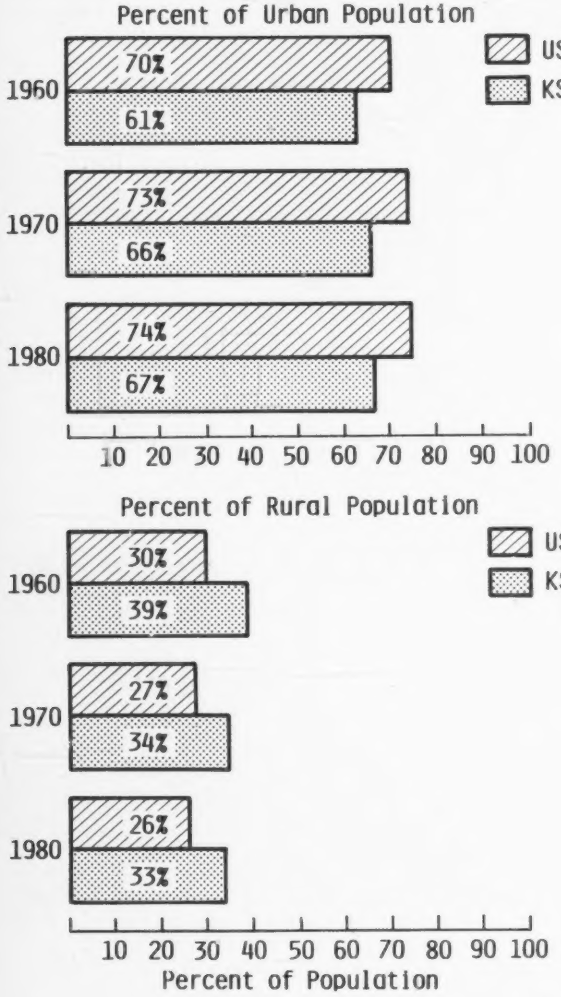
This section examines the distribution of youth in urban and rural areas of Kansas by comparing it to nationwide patterns and to the geographic distribution of the population as a whole. It comes as no surprise to find that Kansas was, and continues to be, far less urban than the nation. Figure 3 presents the urban and rural percent of population trends in Kansas and the U.S.

Three observations follow from this figure. First, throughout the period, Kansas was consistently less urban than the nation as a whole. Second, while the populations of both Kansas and the U.S. were becoming increasingly urban between 1960 and 1970, Kansas was "urbanizing" at a faster rate than the U.S. In 1960, the differences between the urban percentage of the U.S. population and that of Kansas was 9.0%; by 1970, the difference had narrowed to 7.0%. Third, following 1970, Kansas and the nation continued increased urbanization, but at an equal—and much slower—rate.

Figure 4 turns attention to the proportions of the urban and rural populations represented by youth. Focusing on the urban portion of the population reveals that the percentage of total urban population represented by youth was equal (15%) for the state and the nation in 1960. Between 1960 and 1970, youth became

Figure 3

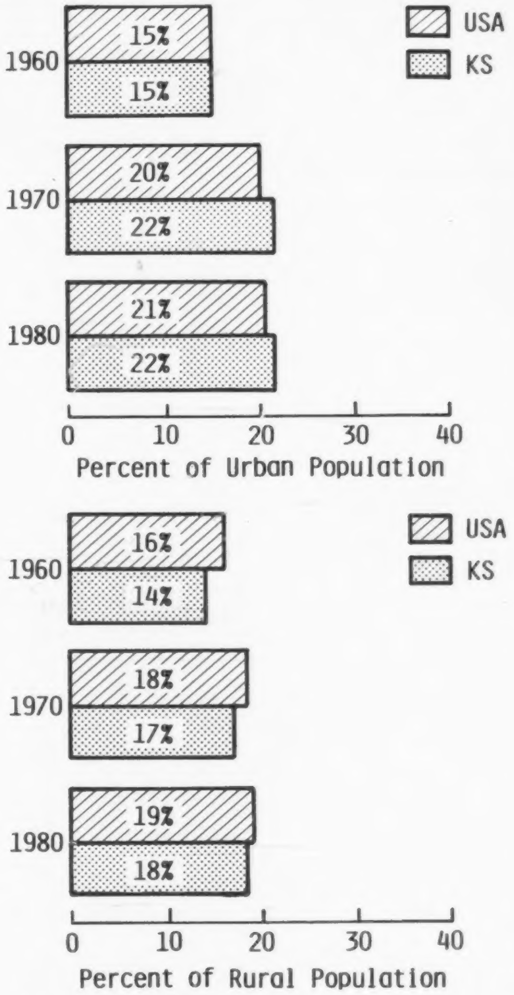
Urban and Rural Percentages of U.S. and Kansas Populations: 1960, 1970, and 1980



Source: Computed from *U.S. Census of Population.*

Figure 4

Proportion of Urban and Rural Youth to Total Population in U.S. and Kansas: 1960, 1970, and 1980



Source: Computed from *U.S. Census of Population.*

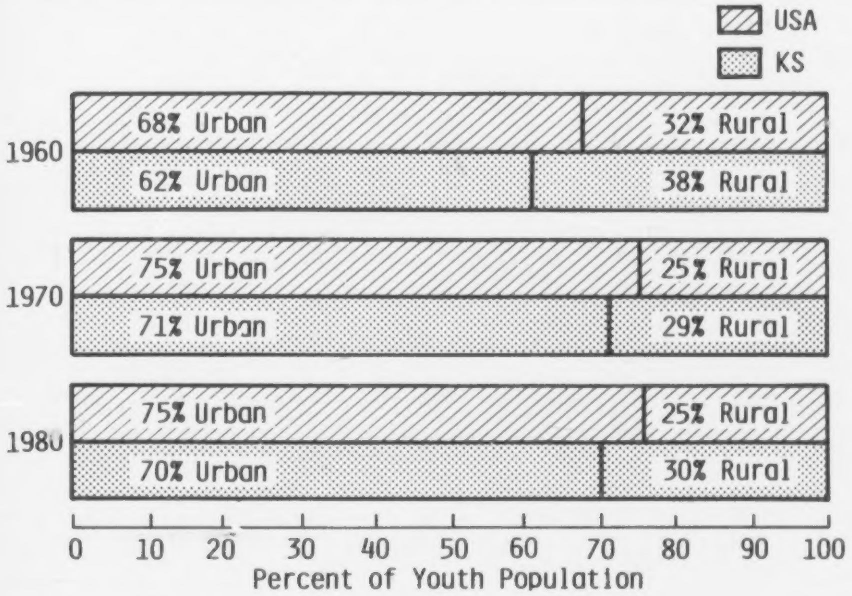
much more concentrated in urban areas, yet slightly more so in Kansas than in the U.S. overall. Then, by 1980, the youth percentage in urban areas of Kansas had stabilized at 22% of the urban population while the national urban youth percentage continued a slight 1.0% increase. The effect of these changes over 20 years was that the relative share of youth in the Kansas urban population increased by 47% and that in the U.S increased by 40%. From another perspective, more than one in every five people in urban areas was between 14 and 24 by 1980.

The rural youth population displayed a different relationship between Kansas and the nation. For both, the percentage of rural population represented by youth grew during the period, although not as rapidly as in the urban population. In fact, in the U.S., the increase of 3.0% of population over the period (from 16% to 19% of the rural population) represented a 19% change. Meanwhile, in Kansas, the change was greater at 29% (an increase of 4.0% over 20 years). While the U.S. percentage of youth in the rural population remained higher than that of Kansas throughout the period, once again the increase in Kansas during 1960 to 1970 was greater than in the nation overall, leading to a halving of the difference between the U.S. and Kansas from 2.0% to 1.0%.

Figure 5 shows how the youth populations in the state and nation were divided between urban and rural areas during the period. Overall, the trend among youth was toward increased urbanization in both the U.S. and Kansas. This trend slowed nationally and reversed slightly in Kansas over the last half of the period.

A comparison of Figures 3 and 5 clearly shows that the percentage of youth in urban areas was uniformly higher than the percentage of total population in urban areas, except for the U.S. in 1960. By 1980, the urban youth percentages of the U.S. and Kansas

Figure 5
Urban/Rural Distribution of Youth Population in U.S. and Kansas: 1960, 1970, and 1980



Source: Computed from *U.S. Census of Population.*

were 1.0% and 3.0% higher than the urban total population percentages, respectively.

The teen/adult youth proportions of the urban and rural areas of the state and nation for the period are summarized below in Table 1.

There was no overall trend for teen youth in Kansas as the percentages of both the urban and rural populations increased from 1960 to 1970, but fell back by 1980 to their 1960 levels. While teen youth in the U.S. exhibited a similar increasing-then-decreasing pattern, there was an overall gain of 1.0% over the period in both urban and rural areas. The result was that, after starting the period with equal teen youth to population percentages, Kansas teen youth were a little less prominent in urban and rural areas than was true nationally.

Examination of the adult youth percentages shows a clearly increasing trend nationally and statewide in both urban and rural areas. These results are consistent with the aforementioned tendency toward higher concentrations of population in urban areas. Between 1960 and 1980, the relative share of adult youth in the Kansas urban environment increased by 67%; in the rural areas by 38%. Nationally, the increases were 56% in urban areas and 22% in rural areas.

Using Table 1 as a basis for comparison, it is clear that during the period, the relationship between Kansas and the nation relative to the importance of teen and adult youth in urban and rural areas had changed slightly. Specifically, except for a 1.0% lower level of adult youth in the rural population in Kansas, in 1960 the teen/adult youth profiles for the state and nation were identical. By 1980, however, the only area of equality was in the adult youth percent of rural populations. In the other categories, Kansas levels were higher by 1.0% (adult youth in urban population) or lower by 1.0% (teen youth in both urban and rural settings). These results lend additional support to the earlier observations about aging populations, particularly the aging of the youth populations.

Table 1
Proportion of Teen and Adult Youth in Urban and Rural Populations of U.S. and Kansas: 1960, 1970, and 1980

	1960		1970		1980	
	US	KS	US	KS	US	KS
Teen Youth as Percent of Urban Population	6.0	6.0	8.0	8.0	7.0	6.0
Teen Youth as Percent of Rural Population	7.0	7.0	8.6	9.0	8.0	7.0
Adult Youth as Percent of Urban Population	9.0	9.0	12.0	14.0	14.0	15.0
Adult Youth as Percent of Rural Population	9.0	8.0	9.6	9.0	11.0	11.0

Source: Calculated from *U.S. Census of Population.*

C. COUNTY-LEVEL ANALYSIS OF THE YOUTH PROPORTION OF THE POPULATION

Analysis of changes in the proportions of youth to total population in Kansas counties disclosed that youth had become increasingly concentrated in certain counties and, further, that the concentrations had shifted among the regions of the state during the 20-year period.

While the overall youth level in Kansas increased from 1960 to 1980, the county-by-county results were quite variable, although less variable in 1980 than in 1960. For example, between 1960 and 1980, the number of counties whose percentage of population between 14 and 24 years old equaled or exceeded the statewide average declined from 16 to 13. Table 2 lists the counties equaling or exceeding the statewide youth percentage for each of the census years.

There were seven counties which consistently equaled or exceeded the statewide youth percentage and five which did so for two of the three census years. Although the number of counties with high youth levels decreased, the level of youth within those counties became more concentrated. For example, the seven counties with consistently high youth levels accounted for 16% of the total youth population in 1960, but 20% and 18% for 1970 and 1980, respectively.

This increasing concentration of youth in these seven counties is easily explained as a function of the presence of expanding colleges and/or military bases. The influence of state universities (whose combined enrollment was up over 6,000 from 1971-1980) on the composition of the population in Douglas (34.3% of the population in 1980 aged 14 to 24 years), Ellis (28.9%), Lyon (27%), and Crawford (21.5%) counties is apparent. The combined impact of universities and military bases appeared in Riley (41.3%) and Geary (30.2%) counties. The other consistently high youth-level county was Atchison (23%) which contains the second largest private college in Kansas.

Upon turning to the characteristics of all the high youth-level counties, one notes that they tended to have larger-than-average total populations. In fact, the 13 high youth-level counties in 1980 had an average population of 31,389, roughly 39% greater than the statewide average.

As Figure 6 shows, the geographic concentration of high youth-level counties changed significantly during the period. Youth became more concentrated in the northern rather than the southern part of the state, as well as shifting from the eastern to the western half. Of the 16 high youth-level counties in 1960, nine were northern counties. By 1980, eight of 13 high youth counties were located in the northern part of the state. Seventy-five percent of high youth-level counties were located in the eastern half of the state in 1960. Twenty years later, just slightly over 50% of them were eastern counties. The region of the state which lost the most high youth-level counties during the period was the southeastern quadrant. There was only one southeastern county in the high youth level group in 1980 compared with four in 1960.

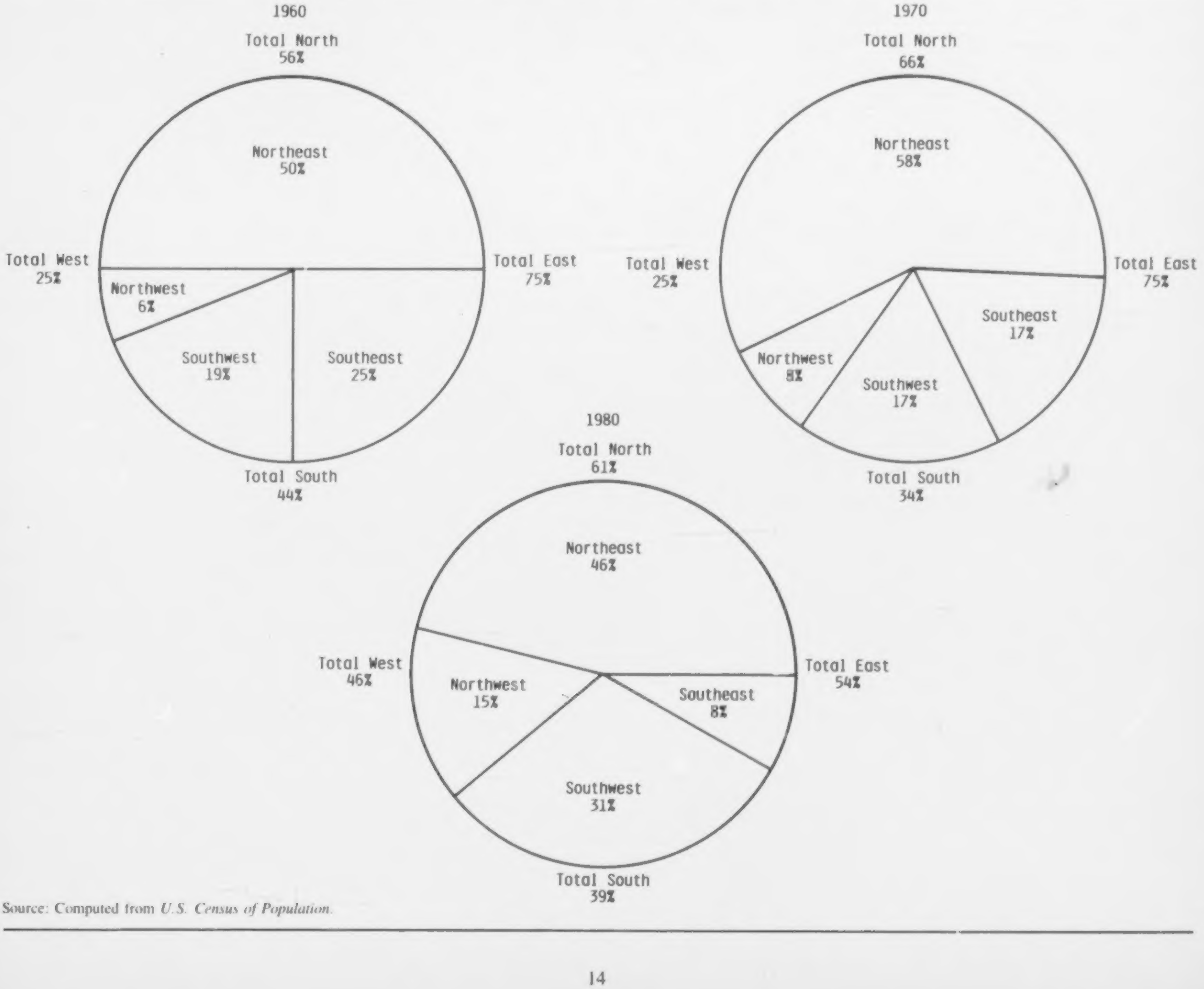
Notwithstanding the shifts in concentration among Kansas' regions, the northeastern quadrant consistently accounted for most of the youth population. For example, despite the loss of two northeastern counties from the high youth-level group during the period, the six remaining northeastern counties contained 17% of all the youth in the state in 1980.

Focusing on those counties with notably low percentages of youth in their population reveals a high concentration of these counties in the north-central portion of the state.[3] Using youth levels less than 75% of the statewide youth-to-population percentage as a criterion, the number of low youth-level counties increased dramatically during the period, from seven in 1960 to 24 by 1980. While these counties were distributed throughout the state, 10 of the 24 were located in the north-central region.

Another characteristic of low youth-level counties was that they tended to have a smaller-than-average total population. For 1980, the average population of low youth-level counties was 6,208 compared to the state average of 22,511. Table 3 identifies the low youth-level counties for the period. There were five counties which had low youth levels in each of the census years and 12 with low youth levels in two of the three census years.

One other noteworthy pattern pertaining to county-level teen/adult youth distribution, deserves examination. Specifically, certain counties, with slight variations, consistently had relatively low teen youth-levels and simultaneously high adult youth-levels. This characteristic of these counties (identified in Table 4) can be explained at least partially in terms of the concentrations of college- and military-

Figure 6
Percent of High Youth-Level Counties in Each Quadrant: 1960, 1970, and 1980



Source: Computed from *U.S. Census of Population.*

Table 2

Kansas Counties with Proportions of Youth-to-Total Population Equal to or Greater than Statewide Levels: 1960, 1970, and 1980

1960	1970	1980
Atchison[a]	Atchison[a]	Atchison[a]
Crawford[a]	Crawford	Crawford[a]
Cowley	Douglas	Douglas[a]
Douglas	Ellis[a]	Ellis[a]
Geary[a]	Finney[b]	Finney[b]
Greeley	Geary[a]	Geary[a]
Harvey	Lyon[a]	Grant
Lyon[a]	McPherson[b]	Lyon[a]
McPherson[b]	Riley[a]	Riley[a]
Reno	Sedgwick	Saline[b]
Riley[b]	Shawnee[b]	Seward
Saline[b]		Thomas
Stevens		
Wichita		

[a] Indicates those counties equalling or exceeding state youth percentages in all three census years.

[b] Indicates those counties equalling or exceeding state youth percentages in two of the three census years.

Source: Calculated from *U.S. Census of Population.*

Table 4

Kansas Counties with Proportions of Teen Youth-to-Total Youth Population Less than the State Average Percentage: 1960, 1970, and 1980

1960	1970	1980
Atchison[b]	Atchison[b]	Crawford[a]
Cowley	Crawford[a]	Douglas[a]
Crawford[a]	Douglas[a]	Ellis[a]
Douglas[a]	Ellis[a]	Ford
Ellis[a]	Geary[a]	Geary[a]
Finney	Leavenworth[b]	Harvey[b]
Geary[a]	Lyon[a]	Lyon[a]
Grant	McPherson	Pratt
Harvey[b]	Reno	Riley[a]
Leavenworth[b]	Riley[a]	Saline[b]
Lyon[a]	Thomas[b]	Sedgwick[b]
Saline[b]		Seward
Sedgwick[b]		Shawnee[b]
Shawnee[b]		Thomas[b]
Riley[a]		
Wyandotte		

[a] Indicates county consistently (1960, 1970, 1980) had proportions of teen youth to total youth less than the state average.

[b] Indicates county had proportions of teen youth to total youth less than the state average in 2 of 3 census years.

Source: Calculated from *U.S. Census of Population.*

Table 3

Kansas Counties with Proportions of Youth-to-Total Population Less than 75% of Statewide Levels: 1960, 1970, and 1980

1960	1970	1980
Decatur	Brown[b]	Barber
Elk[a]	Chase[b]	Brown[b]
Gove	Chautauqua[b]	Chase[b]
Lincoln[a]	Clark[b]	Chautauqua[b]
Osborne[a]	Coffey	Cheyenne
Republic[a]	Edwards	Clark[b]
Smith[a]	Elk[a]	Clay
	Ellsworth[b]	Comanche
	Greenwood[b]	Elk[a]
	Harper[b]	Ellsworth[b]
	Jewell[b]	Greenwood[b]
	Lincoln[a]	Harper[b]
	Linn[b]	Jewell[b]
	Marshall	Lincoln[a]
	Morris	Linn[b]
	Osborne[a]	Norton
	Nemaha	Osborne[a]
	Ness	Phillips
	Republic[a]	Republic[a]
	Ottawa	Rush
	Smith[a]	Smith[a]
	Stafford[b]	Stafford[b]
	Wabaunsee	Washington[b]
	Washington[b]	Woodson[b]
	Woodson[b]	

[a] Indicates County consistently (1960, 1970, 1980) had low youth level (low youth level defined as less than 75% of the statewide average youth-to-population percentage).

[b] Indicates county had low youth level in 2 of 3 census years (low youth level defined as less than 75% of the statewide average youth-to-population percentage).

Source: Calculated from *U.S. Census of Population.*

aged individuals. There were six counties which had lower teen youth-levels in each of the census years and seven with low teen youth levels in two of the three census years.

D. ANALYSIS OF THE YOUTH PROPORTIONS IN SMSAs IN KANSAS AND THE U.S.

Before discussing the results of research on the characteristics of youth within SMSAs, it is important to note the lack of comparability between SMSA data between census years. Since SMSA designations are based on population levels, the number of SMSAs is subject to frequent changes. For example, in 1960 there were only two designated Kansas SMSAs: Topeka and Wichita. In 1970, the Kansas portion of the Kansas City SMSA was identified as a Kansas SMSA in addition to Topeka and Wichita. Finally in 1980, Lawrence was added to the three previously designated Kansas SMSAs.

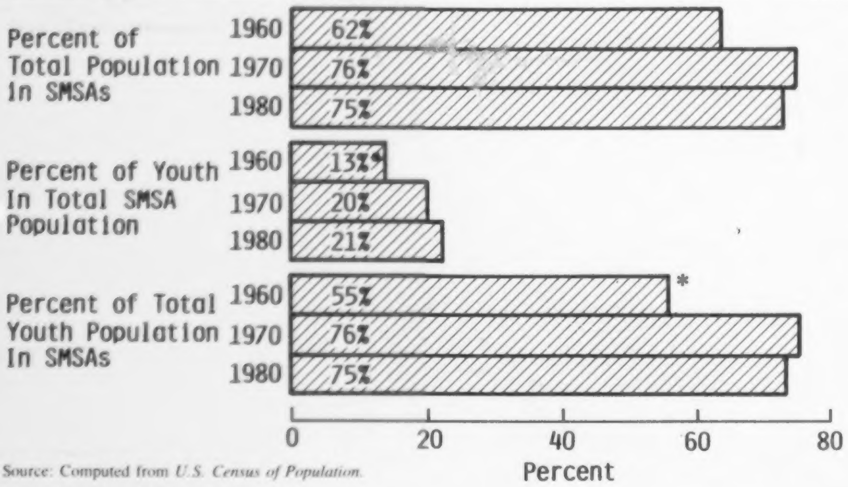
Adding further to the noncomparability of data is the periodic redefinition of SMSAs in terms of counties encompassed. Of particular import to this analysis is that the 1960 U.S. summary data did not include population information for SMSAs in a manner allowing for teen and adult youth-group calculations.

The end result of these conditions is that analyzing changes in youth levels inside SMSAs throughout the period is rendered inexact. Therefore, observations concerning trends and comparisions of relative positions should be read cautiously in recognition that at least some part of interperiod changes are likely due to data inconsistencies.

Figure 7 shows that the SMSAs in the U.S. grew rapidly from 1960 to 1970 but remained

Figure 7

Concentration of Population in SMSAs and Youth in SMSAs in U.S.: 1960, 1970, and 1980



Source: Computed from *U.S. Census of Population.*

* Does not include 14-year olds.

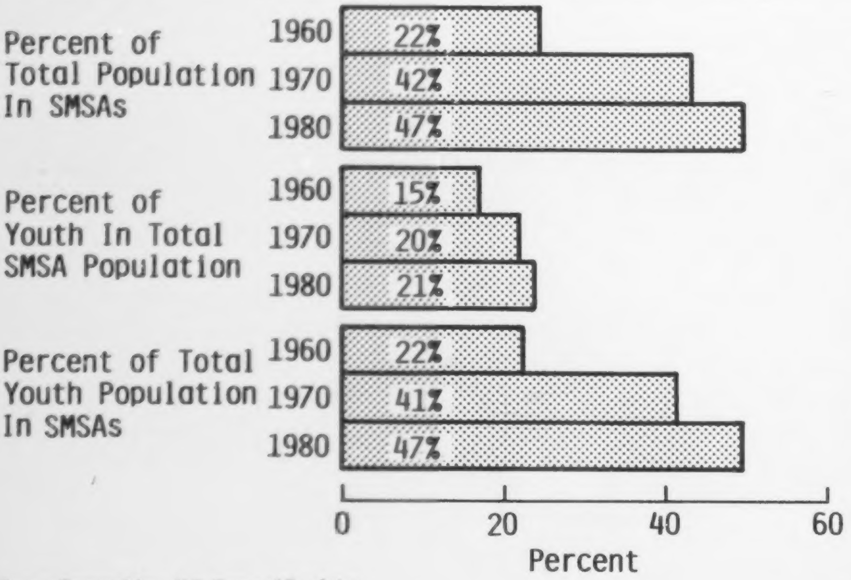
stable over the next 10 years. Further, the level of youth in the SMSAs followed a similar pattern.

Figure 8 presents similar data for Kansas. As might be expected, the level of both total population and youth living in Kansas SMSAs was consistently much lower than in the U.S. overall. In fact by 1980, less than one half of Kansans and Kansas youth lived in SMSAs, as compared with three fourths of the U.S. population and youth. Interestingly, the proportions of SMSA population comprised of youth were the same in the U.S. and in Kansas, leading to the conclusion that, although SMSAs were less important in Kansas than in the nation, the age composition and relative impact of youth in SMSAs were about the same.

Figure 9 shows the teen/adult youth composition in SMSAs in the U.S. and in Kansas for the period. Comparisons of national and statewide data indicated similar patterns. Once again the aging of the population was evident as the proportion of SMSA youth between 14 and 17 years of age declined from 1970 to 1980. By 1980, the teen/adult composition of SMSAs in Kansas and the U.S. was essentially equivalent.

Figure 8

Concentration of Population in SMSAs and Youth in SMSAs in Kansas: 1960, 1970, and 1980



Source: Computed from *U.S. Census of Population.*

By referring to Figures 7 and 8, one can see that the migration of the population to SMSAs, which stopped during the second half of the period in the nation as a whole, apparently continued in Kansas (at about 13% of the first-half rate). This trend applied to youth populations also, as Table 5 demonstrates.

In Kansas from 1970 to 1980, the percentage of the teen youth living in SMSAs increased by 5.0% while the U.S. percentage remained constant. The proportion of adult youth in Kansas who were living in SMSAs increased by 8.0% over the same 10 years, whereas the national proportion declined by 1.0%. As in the total population, by 1980 about three fourths of all youth in the nation lived in SMSAs, but in Kansas, less than one half did so.

Table 6, concerned with the individual Kansas SMSAs, compares the status of each of the Kansas SMSAs throughout the period.[4] The Lawrence SMSA had the highest percentage of youth among the SMSAs irrespective of census year (35% in 1980). This result was not surprising given the impact of the Uiversity of Kansas on the population. Also consistent with the University presence, the Lawrence SMSA had unusually high adult youth proportions of total youth with concurrently low proportions of teen youth.

The Kansas City SMSA, on the other hand, had the lowest level of youth among the SMSAs for 1970 and for 1980 (equal with Topeka). It also had the smallest difference between the teen and adult youth shares of the population for 1970 and 1980 (for which year, both Kansas City and Topeka had differences of 5.0%). The teen share of total SMSA youth in Kansas City was the highest among the SMSAs for both years (45% and 30%). Therefore, the Kansas City SMSA could be characterized as having a lower youth concentration than the other SMSAs, but a relatively higher teen-youth level.

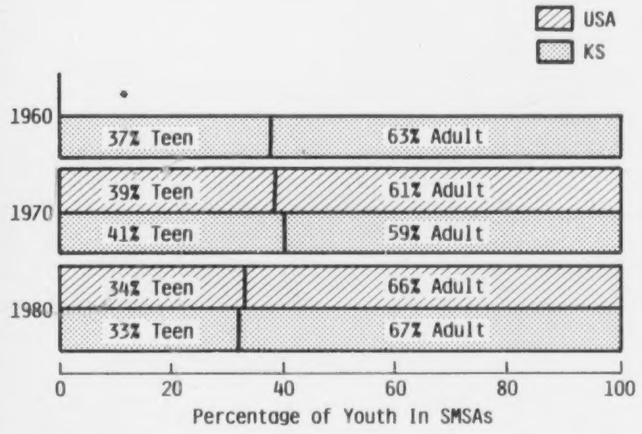
II. Sex Composition of Youth in Kansas and in the U.S.

A. GENERAL COMPARISONS

For Kansas and for the nation as a whole, the sex compositions of the total population and the youth population *and* of the teen/adult youth population were fairly constant during the period, as demonstrated in Tables 7 and 8. Table 7 reveals the very close similarities in the sex compositions of the state and the nation populations. Not surprisingly (as would

Figure 9

Teen/Adult Composition of SMSA Youth Population in U.S. and Kansas: 1960,* 1970, and 1980



Source: Computed from *U.S. Census of Population*

* Comparable teen/adult youth composition data for U.S. were unavailable

Table 6

Analysis of Youth Concentration and Adult/Teen Youth Composition in Kansas SMSAs: 1960, 1970, and 1980

	Kansas City[a]			Lawrence[b]			Topeka			Wichita		
	1960	1970	1980	1960	1970	1980	1960	1970	1980	1960	1970	1980
Percent of Youth in the SMSA Population	NA	18	19	NA	NA	35	15	20	19	15	20	21
Percent of Teen Youth in the SMSA Population	NA	8	7	NA	NA	5	5	8	7	6	8	7
Percent of Adult Youth in the SMSA Population	NA	10	12	NA	NA	30	10	12	12	9	12	14
Proportion of Teen Youth in Total Youth in the SMSA	NA	45	38	NA	NA	14	33	37	37	39	40	32
Proportion of Adult Youth in Total Youth in the SMSA	NA	55	62	NA	NA	86	67	63	63	61	60	68

[a] Kansas part of the Kansas City SMSA not identified separately until the 1980 census.

[b] Lawrence SMSA not identified until the 1980 census.

Source: Calculated from *U.S. Census of Population.*

Table 5

Concentration of Teen and Adult Youth in SMSAs in U.S. and Kansas: 1970 and 1980

	U.S.		Kansas	
	1970	1980	1970	1980
Percent of Total Teen Youth Living in SMSA's	74	74	43	48
Percent of Total Adult Youth Living in SMSA's	77	76	39	47

Source: Calculated from *U.S. Census of Population.*

be expected for large populations), the sex composition demonstrated almost no variability, nearly equally divided between females and males. The minor variability this table shows is that, in Kansas, the female proportion of the overall population increased (and, or course, the male proportion decreased) by 1.0 between 1960 and 1970. These levels then remained constant through the next decade.

Table 8 presents the nearly equal proportions of the four sex-age subgroups within the youth population in the national and Kansas populations

Another way of viewing the changing composition of youth is to examine the teen/adult trends among total male and female youth. The data indicate that the distribution of teen and adult groups within the female youth population in Kansas was equal to that in the U.S. for 1960 and 1970. By 1980, however, the level of adult youth among Kansas female youth was 2.0 higher than that in the U.S.

For the male youth populations, considerably more variance between the state and the nation was evident. At no time did the state teen/adult distribution parallel the national one. In fact, the Kansas male youth consistently contained higher levels of adult youth than the U.S. Interestingly, the Kansas male youth exactly mirrored the Kansas female youth in teen/adult youth distribution.

By 1980, 67% of both Kansas male and female youth were in the 18-24 age group (representing a 13% increase over the 20-year period) compared with 65% of U.S. female youth and 64% of U.S. male youth. This means that relative to its 1960 levels, the teen group had decreased 19% among youth of either sex in Kansas. Further, this decrease was greater during the last half of the period than the first.

B. SEX COMPOSITION OF URBAN AND RURAL YOUTH

Having already determined that Kansas total and youth populations were certainly less urban than national averages, the examination now focuses on whether there were any notable differences among male and female youth in Kansas versus the U.S. with respect to urban/rural concentrations and whether patterns of change could be detected.

Data in Table 9 indicate the degree of concentration of youth by sex in urban and rural areas.

Table 7

Sex Composition of the Total Population and Youth Population in U.S. and Kansas: 1960, 1970, and 1980

	1960		1970		1980	
	US	KS	US	KS	US	KS
Female Proportion of the Population	51%	50%	51%	51%	51%	51%
Male Proportion of the Population	49	50	49	49	49	49
Female Proportion of Youth Population	50	49	50	49	50	49
Male Proportion of Youth Population	50	51	50	51	50	51

Source: Calculated from *U.S. Census of Population.*

Table 8

Teen/Adult Youth Proportions of the Total Population by Sex in U.S. and Kansas: 1960, 1970, and 1980

	1960		1970		1980	
	US	KS	US	KS	US	KS
Female Teen Proportion of the Population	3%	3%	4%	4%	4%	3%
Male Teen Proportion of the Population	3	3	4	4	4	3
Female Adult Proportion of the Population	4	4	6	6	7	7
Male Adult Proportion of the Population	4	4	6	6	7	7

Source: Calculated from *U.S. Census of Population.*

BEST AVAILABLE COPY

Table 9
Urban/Rural Distribution of Youth by Sex in U.S. and Kansas: 1960, 1970, and 1980

	1960		1970		1980	
	US	KS	US	KS	US	KS
Female Youth as Percent of Urban Population	8%	8%	10%	11%	10%	11%
Female Youth as Percent of Rural Population	7	6	9	8	9	9
Male Youth as Percent of Urban Population	7	7	10	11	10	11
Male Youth as Percent of Rural Population	8	8	9	9	10	10

Source: Calculated from *U.S. Census of Population.*

As the preceding table shows, the levels of both male and female youth were higher in urban and rural areas at the end of the period than at the beginning. This was the case in the nation and in Kansas. There was a difference in the growth pattern of urban as opposed to rural populations. Specifically, urban levels had stabilized after the first half of the period, both nationally and in Kansas. Rural levels, however, continued to increase for each group except U.S. female youth, which had stabilized at 9.0% of the rural population.

Comparing end-of-period levels, urban percentages for both sexes were 1.0% higher in Kansas than in the nation while rural proportions were identical. By 1980 at both the national and state levels, male and female youth levels in urban populations were the same. In rural populations, on the other hand, male youth levels were just slightly higher (1.0%) than female youth levels.

Table 10 indicates the urban/rural distribution of female and male youth in the U.S. and Kansas. In the U.S. at the beginning of the period, a higher proportion of female youth (6.0%) lived in urban areas than did male youth (who obviously had a comparably higher rural proportion). By the end of the period, the urban/rural levels were essentially the same.

Further, the data indicate a strong trend among both male and female youth toward concentration in urban areas. The female youth living in urban areas increased 9.0% during the 20-year period while their male counterparts increased 14%. This trend was completed by 1970. Thereafter, urban/rural concentrations remained stable.

For Kansas, similar observations apply. However, not surprisingly, Kansas youth reflected a persistently lower urban level than did national youth populations. In fact by 1980, the urban level was 6.0% lower among male youth in Kansas and 5.0% lower among young females than the corresponding U.S. groups.

Table 10
Distribution of Female and Male Youth in Urban/Rural Areas in U.S. and Kansas: 1960, 1970, and 1980

	1960		1970		1980	
	US	KS	US	KS	US	KS
Percent of Female Urban Youth in All Female Youth	70%	66%	76%	71%	76%	71%
Percent of Female Rural Youth in All Female Youth	30	34	24	29	24	29
Percent of Male Urban Youth in All Male Youth	66	59	75	71	75	69
Percent of Male Rural Youth in All Male Youth	34	41	25	29	25	31

Source: Calculated from *U.S. Census of Population.*

Figure 10 illustrates how the urban and rural youth population were distributed by teen/adult youth classifications. The teen/adult youth proportions of urban and rural young males and females in the U.S. and Kansas were similar. There were two major trends which were mirrored in Kansas and the U.S.: increases among urban adult youth of both sexes and decreases among rural teen youth of both sexes. While the magnitude of the changes in these groups over the period were different, the direction was obvious and consistent. These major trends can be further broken down into eight group patterns:

- Urban female adult youth in the U.S. increased 19% over the period.
- Urban male adult youth in the U.S. increased 28%.
- Rural female teen youth nationwide decreased 29%.
- Rural male teen youth nationwide decreased 31%.
- Kansas urban female adult youth increased 19%.
- Kansas urban male adult youth increased 36%.
- Kansas rural female teen youth decreased 29%.
- Kansas rural male teen youth decreased 33%.

Table 11
Instances of High Female and Male Youth Levels in Kansas Counties: 1960, 1970, and 1980

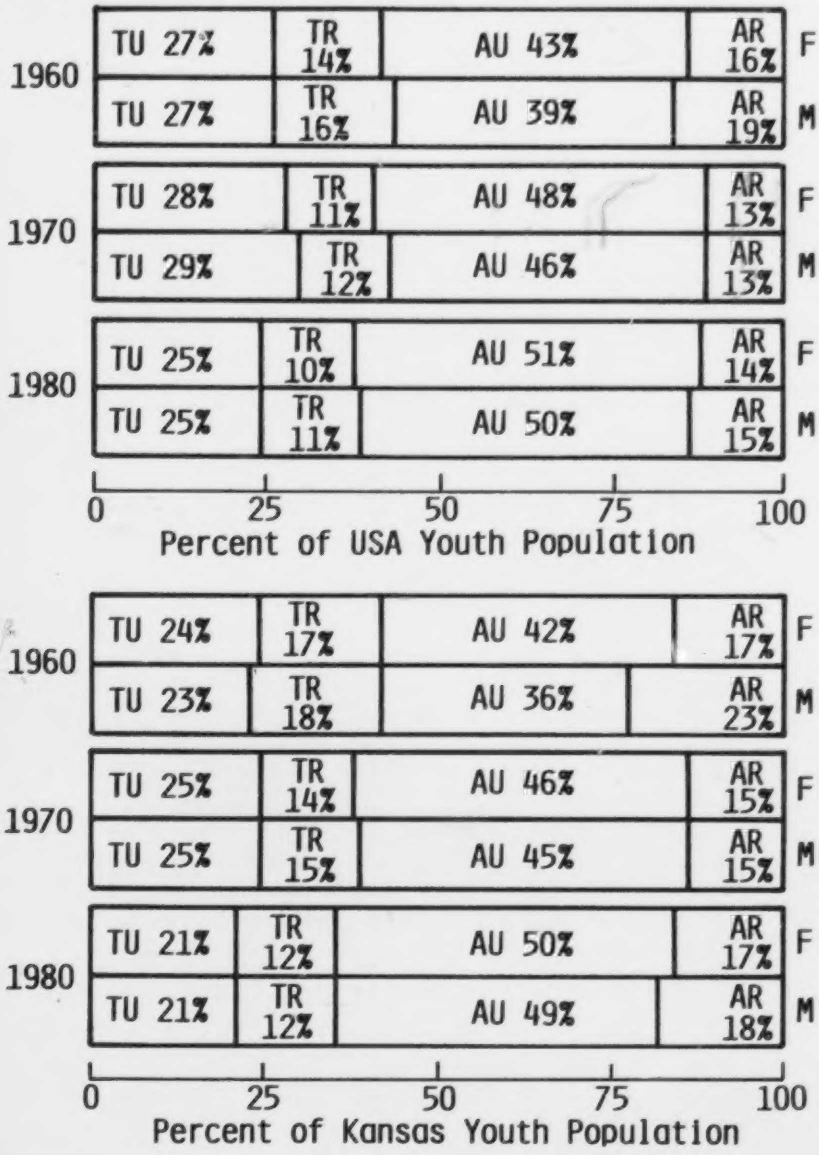
	1960	1970	1980	Total
Number Cases High Female Youth Levels	16	8	5	29
Number Cases High Male Youth Levels	5	4	14	23

The other categories showed varying increases and decreases over the 20 years. The group with the most variability (measured in absolute value of changes between census years) was Kansas rural male adult youth which experienced a total change of 11% over the 20 years.

C. DISTRIBUTION OF YOUTH BY SEX ON A COUNTY-BY-COUNTY BASIS

While the statewide distribution of youth by sex remained almost perfectly constant, county-by-county distributions were highly variable through the period. As was noted earlier (Table 7), the proportion of male youth to total youth in Kansas remained at 51% throughout the period, and the proportion of female youth to total youth was likewise constant at 49%. Further, identical levels applied to the sex distributions of teen and adult youth,

Figure 10
Teen/Adult Composition of Female and Male Youth in Urban and Rural Areas of U.S. and Kansas: 1960, 1970, and 1980



Source: Computed from *U.S. Census of Population.*

except for 1960 when adult youth were 50% male and 50% female.

County-by-county details are provided in an appendix (available to readers upon request) which lists all 105 Kansas counties and the proportions of male and female teen and adult youth in each for all three census years. Listed below are the principal observations about sex distributions from that county data.

- For the entire period, there were six cases with high[5] female teen to total teen youth percentages and seven cases of high[6] male teen to total teen youth levels.
- There were 23 cases of high female adult youth to total adult youth percentages and 16 cases of high male adult youth to adult youth levels.
- The cases of high female teen/adult youth levels occurred in 27 different counties, while the high male teen/adult youth levels included 16 different counties.
- The pattern of high youth level cases over time was very different for females than for males. Table 11 below shows this pattern. The instances of high female youth levels became dramatically less frequent during the period, while those of male youth occurred in almost an exactly opposite manner.
- There was little consistency among the counties with high female youth levels. Only two counties had high levels more than once: Chase, adult female youth in 1970 and 1980, and Wyandotte, adult female youth in 1960 and 1970.
- There was more consistency among counties with high male youth levels: Riley, teen and adult male youth in 1960 and adult male youth in 1970 and 1980; Geary, adult male youth in 1960, 1970 and 1980; Gove, adult male youth in 1960 and 1980; and Leavenworth, adult male youth in 1970 and 1980.
- The highest and lowest female teen youth rates for all counties over the entire period were 55% and 39%, respectively. For female adult youth, the range was from 57% to 24%.
- The range for male teen youth was from 61% to 45%; that for male adult youth was from 76% to 43%.
- Using the previously mentioned indicator of high female and high male youth levels (at least 54% and at least 57%, respectively), Table 12 lists the counties, other than those identified above, which had high youth levels.

Obviously, the counties with high levels of a particular sex-age group also had corresponding low levels of the opposite sex-age group. For example, in 1960, Gove County had a male adult youth level of 76% and a female adult youth level of 24%.

Riley and Geary counties were the only ones with high levels in each census year of the period. Their consistently high male adult youth levels can be attributed, in large part, to the presence of Fort Riley.

III. Racial Composition of Youth in Kansas and the U.S.

Before beginning a discussion of the specific results and conclusions drawn from *Census* data on the racial make-up of the youth populations, a few clarifications and preliminary remarks are warranted. Census identification and classification procedures for racial groups were not consistent over the entire 20-year period. These inconsistencies were sufficiently major in nature that there is no basis for comparison of data between census years. There were two principal inconsistencies responsible for this state of affairs.

First, blacks were not separately classified until 1970; rather they were included under the "other" category. Therefore inter-census comparisons of the black group between 1960 and subsequent years were not possible.

Second, the composition of the "other"

Table 12
Kansas Counties with High[a] Sex/Age Levels: 1960, 1970, and 1980[b]

Female Teen		Female Adult		Male Teen		Male Adult	
Finney	1960	Barton	1960	Ness	1980	Clay	1980
Kearny	1980	Bourbon	1960	Ottawa	1960	Hodgeman	1970
Mitchell	1980	Cheyenne	1970	Rawlins	1980	Lincoln	1980
Osborne	1960	Cloud	1960	Rush	1980	Sheridan	1980
Wallace	1980	Graham	1960	Smith	1980	Sherman	1980
Woodson	1980	Harper	1960	Wichita	1980	Washington	1980
		Harvey	1960				
		Hodgeman	1960				
		Johnson	1970				
		Miami	1970				
		Norton	1970				
		Rush	1970				
		Russell	1960				
		Saline	1970				
		Sedgwick	1960				
		Seward	1960				
		Sherman	1960				
		Smith	1960				
		Stanton	1960				

[a] High levels here are defined, as they were previously, as at least 54% compared with a statewide percentage of 49% among females and as at least 57% compared with a statewide percentage of 51% among males.

[b] Does not include Chase, Wyandotte, Riley, Geary, Gove, and Leavenworth counties.

group has been changed in each of the three census years. In 1970, blacks were removed from the "other" category and separately classified. Then, in 1980, the "other" category was expanded to include 12 specific races and a general group. Also, in 1980, the method of classifying individuals of hispanic origin was changed with the effect that many who previously had been included in the white group were classified as "other." As the result, comparisons between censuses are meaningless.

In response to these circumstances, the following section will present the data but will not analyze it in terms of probable trends and patterns arising over time. Analysis will concentrate instead on the 1980 *Census* data and the picture it presents of the racial composition of the U.S. and Kansas youth populations.

Historically, the level of racial diversity in Kansas has been less than in the U.S. overall. This characteristic was true for young Kansans as well as the total population. Table 13 merely confirms the differences between Kansas and the nation regarding racial diversity.

Note that Table 13 concerns itself only with the censuses for 1970 and 1980. Columns 1 and 2 provide the percentage of total population in each racial group in 1970 and 1980 for Kansas and the U.S., respectively. Subtracting the Kansas percentage from that of the U.S. provides the information shown in Column 3. A negative difference indicates that the Kansas proportion was higher than the U.S. for a particular group and year; a positive difference means the opposite. Column 4 shows the result of dividing the Kansas percentage in each group and year by the corresponding U.S. percentage. This calculation provides a measure of relative concentration.

Several interesting conclusions can be drawn from data in Table 13. The proportion of whites in the population declined, both in Kansas and the U.S., but the magnitude of decline was lower in Kansas. As a result, the relative concentration of whites in the Kansas population increased by 2.0% as compared to the U.S., indicating that while Kansas was becoming more racially diverse, it was doing so more slowly than the nation as a whole. The black proportion of the national population increased by 9.0% but remained constant in Kansas at 5.0% of the population. The relative proportion of blacks in Kansas versus U.S. populations declined from 45% to 42%. The "other" group increased nationally and in the state, and the Kansas relative proportion changed more than either of the other groups (from 50% to 60% of the U.S. percentage), primarily due to the aforementioned reclassification of hispanics.

Given the racial composition trends in the overall population, one would expect similar patterns to have emerged within the youth populations. Figure 11 compares the racial composition of youth in the U.S. with that in Kansas for census years 1960, 1970, and 1980.

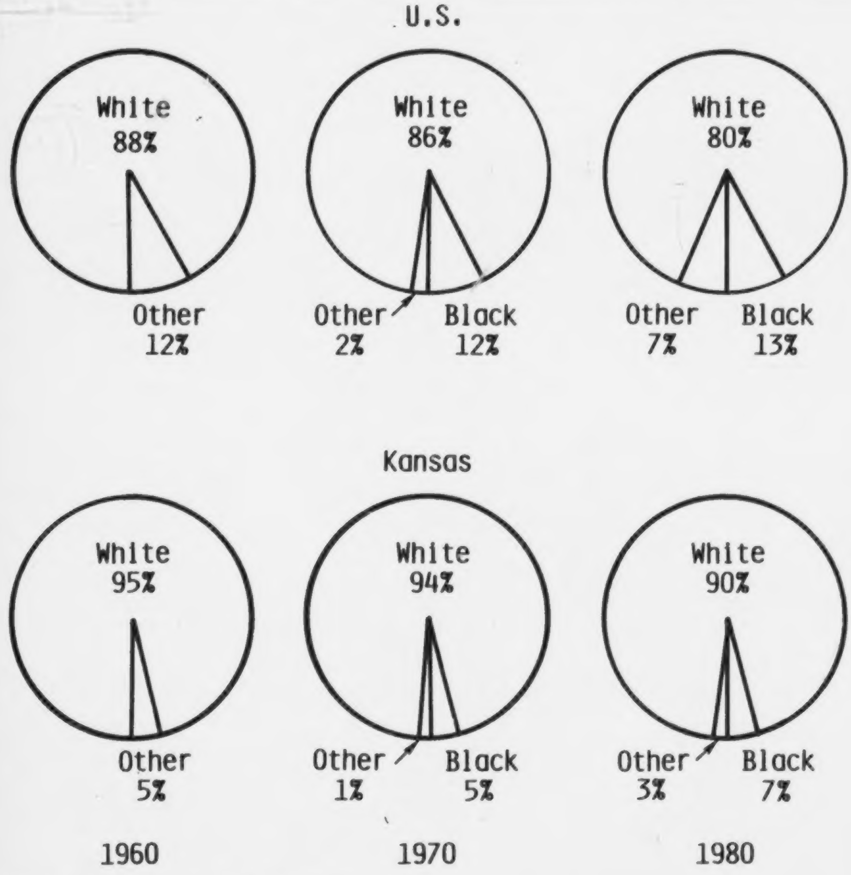
An initial examination of Figure 11 shows that in Kansas, as in the nation, the white percentage of the youth population declined over the period. Simultaneously, the black and "other" youth categories increased both in the state and nation. The degree of racial diversity among Kansas youth was consist-

Table 13
Comparison of Racial Composition of U.S. and Kansas Populations: 1970 and 1980

Race and Year		Proportion of Kansas Population	Proportion of U.S. Population	Difference Col. 2 – Col. 1	Relative Proportion Col. 1 / Col. 2
White	1970	94%	87%	–7%	108%
	1980	92	83	–9	110
Black	1970	5	11	6	45
	1980	5	12	7	42
Other	1970	1	2	1	50
	1980	3	5	2	60

Source: Calculated from *U.S. Census of Population.*

Figure 11
Racial Composition of Youth in U.S. and Kansas: 1960, 1970, and 1980



Source: Computed from *U.S. Census of Population.*

Table 14
Comparison of Racial Composition of Youth in U.S. and Kansas: 1960, 1970, and 1980

Race and Year		Difference U.S.-Kansas Proportions	Relative Proportions Kansas Proportions U.S. Proportions
White	1960[a]	– 7%	108%
	1970	– 8	109
	1980	–10	113
Black	1970	7	42
	1980	6	54
Other	1960[a]	7	42
	1970	1	50
	1980	4	43

[a] Recall the previous comment about racial group categories. Prior to 1970, blacks were included with "Other" rather than identified separately.

Source: Calculated from *U.S. Census of Population.*

ently much less than that in the U.S., as the figure clearly shows (20% of U.S. youth in 1980 were other than white compared with 10% of Kansas youth).

It is interesting to compare the racial composition of youth with that of the total population in the state and the nation. The levels of racial diversity in the youth populations were essentially the same as in the total population in 1970. By 1980, however, the U.S. youth population was 3.0% more diverse and the Kansas youth population 2.0% more diverse than their respective total populations. Specifically, the black proportion of the Kansas youth population was 2.0% higher than that of the total Kansas population. The U.S. black percentage of youth was 1.0% higher than in the overall population. While the levels of the "other" group in the Kansas youth and total population were the same (3.0%), the "other" group nationally represented 2.0% more of the youth population than of the total population. These data show that racial diversity was greater within young people than within the total population at the state and national levels.

Table 14, which follows, compares the racial composition of Kansas youth with U.S. youth in much the same manner as Columns 3 and 4 of Table 13. Note, however, that unlike Table 13, data for the white and "other" groups for 1960 are included in this table.

Following are the principal observations from this table. Kansas youth had a substantially higher proportion of whites than U.S. youth—a proportion that increased over the 20-year period. By 1980, the relative proportion of Kansas white youth to U.S. white youth was 113%. The relative proportion of Kansas black youth to U.S. black youth also increased (from 42% to 54% between 1970 and 1980) as the difference between the U.S. and Kansas black percentages of the youth population declined from 7.0% to 6.0%.

Comparison of Tables 14 and 13 provides the following conclusions. The differences between U.S. and Kansas white youth population percentages were greater (by 1.0% in 1970 and 1980) than comparable differences in the overall populations. Consequently, the Kansas youth population exhibited higher relative proportions for whites than the total population.

The differences between U.S. and Kansas black youth percentages and their relative proportions showed a pattern which was opposite of that shown in the total populations. Specifically, black youth in Kansas narrowed the gap with the national percentages, causing their relative proportion to exceed 50% of the national level. Meanwhile, in the total population, the difference increased and the relative proportion fell.

A. RACIAL COMPOSITION OF YOUTH IN KANSAS AND THE U.S. BY TEEN/ADULT CLASSIFICATION

Recall that the deceleration in growth of the youth population overall and the teen youth population in particular was viewed as an indication of the aging of the total population. Attention is now turned to the question of whether similar patterns existed for all racial groups.

Table 15 indicates that the aging effects were more pronounced among white than black youth and greater in Kansas than in the U.S. as a whole.

Since the proportions alone are not comparable from year to year, the analysis will focus on the 1980 results. First, white teen and adult youth as well as other adult youth in Kansas represent larger proportions of the state population than do their counterpart groups nationally. Further, the black teen and adult youth and other teen youth in Kansas are relatively less numerous than in the U.S.

Another way of viewing the nature of the racial composition of teen and adult youth from 1960 to 1980 is to examine the racial make-up of each age group over the period. Accordingly, Table 16 shows the racial composition of the teen and adult youth groups in Kansas and the U.S.

By 1980, the combined black and "other" groups represented 20% and 10% of teen youth in the U.S. and Kansas, respectively. Among adult youth, they represented 20% and 11%, nationally and statewide. Therefore, although Kansas teen and adult youth populations were less racially diverse than their national counterpart population, over 51,000 Kansas youth in 1980 were members of black or other nonwhite racial groups. Clearly, these groups constitute a numerically significant portion of the youth population.

Table 15
Comparison of Teen/Adult Youth Composition in U.S. and Kansas by Racial Group as a Proportion of Total Population: 1960, 1970, and 1980

		1960	1970	1980
		U.S.		
Teen	White	5.5%	6.7%	5.7%
	Black	N/A[a]	1.0	1.0
	Other	.7[a]	.1	.4
Adult	White	7.6	10.1	10.7
	Black	N/A[a]	1.3	1.7
	Other	1.0[a]	.2	.4
		Kansas		
Teen	White	5.8	7.4	6.1
	Black	N/A[a]	.4	.5
	Other	.3[a]	.1	.3
Adult	White	8.3	11.4	12.3
	Black	N/A[a]	.7	1.0
	Other	.5[a]	.2	.5

[a] Blacks were not separately identified in the 1960 Census. Consequently, the "Other" category for that year includes both blacks and others.

Source: Calculated from *U.S. Census of Population.*

B. RACIAL COMPOSITION OF U.S. AND KANSAS YOUTH IN URBAN AND RURAL AREAS

The racial distribution of U.S. and Kansas youth was quite different in urban and rural areas. Further, the concentrations in the nation and state were also quite distinct. Tables 17 and 18 present the age group and racial distribution of urban and rural youth, respectively, in the U.S. and Kansas for each of the census years.

According to the data in Table 17, the racial distribution was not significantly different in 1980 within age groups at the state or national levels except for U.S. black youth. The urban teen youth proportion which was black was 5.0% higher than that in the urban adult youth population. Also, once again the data indicated that Kansas rural youth, irrespective of age group, was much less racially diverse than U.S. urban youth (9.0% among teen youth and 8.0% among adult youth).

Table 18 indicates even more rural racial homogeneity between age groups at the national and state level than was true for urban youth. The U.S. proportions for adult youth in 1980 were identical for those of teen youth. In Kansas, the largest difference was between teen and adult youth whites, with rural white adult youth representing 96% of all rural adult youth as compared to 98% of all rural teen youth in the white group. Not surprisingly, the

Table 16
Racial Composition of Teen/Adult Youth Groups in U.S. and Kansas: 1960, 1970, and 1980

		White		Black		Other	
		Number	%[a]	Number	%[a]	Number	%[a]
				Teen Youth			
1960	U.S.	9,778,958	88	N/A[b]	N/A[b]	1,375,921[b]	12[b]
	Kansas	125,410	96	N/A[b]	N/A[b]	5,882[b]	4[b]
1970	U.S.	13,545,837	86	2,070,588	13	222,963	1
	Kansas	166,192	94	9,141	5	1,235	1
1980	U.S.	12,949,847	80	2,363,616	15	822,537	5
	Kansas	144,078	90	10,930	7	5,326	3
				Adult Youth			
1960	U.S.	13,685,569	88	N/A[b]	N/A[b]	1,918,598[b]	12[b]
	Kansas	180,247	95	N/A[b]	N/A[b]	10,442[b]	5[b]
1970	U.S.	20,591,970	87	2,718,854	11	386,516	2
	Kansas	256,113	93	14,617	5	3,997	2
1980	U.S.	24,293,818	80	3,913,915	13	2,129,267	7
	Kansas	289,896	89	23,799	7	11,105	4

[a] Represents percent of total youth in that age group, i.e., total teen youth or total adult youth.

[b] U.S. Census of Population did not separately identify blacks in 1960. Accordingly, they are included in "Other" for that year.

Source: Calculated from *U.S. Census of Population.*

Table 17
Racial Composition of Urban Teen/Adult Youth Populations of U.S. and Kansas: 1960, 1970, and 1980

	1960		1970		1980	
	U.S.	Kansas	U.S.	Kansas	U.S.	Kansas
Percent Urban Teen Youth						
White	88	93	84	91	76	85
Black	N/A[a]	N/A[a]	14	8	17	10
Other	12[a]	7[a]	2	1	7	5
Percent Urban Adult Youth						
White	87	93	86	92	79	87
Black	N/A[a]	N/A[a]	12	7	12	9
Other	13[a]	7[a]	2	1	9	4

[a] Blacks were not separately identified until the 1970 Census. Accordingly, the 1960 "Other" category contains all nonwhite groups.

Source: Calculated from *U.S. Census of Population.*

BEST AVAILABLE COPY

Table 18

Racial Composition of Rural Teen/Adult Youth Populations of U.S. and Kansas: 1960, 1970, and 1980

	1960		1970		1980	
	U.S.	Kansas	U.S.	Kansas	U.S.	Kansas
Percent Rural Teen Youth						
White	87	99	88	99	89	98
Black	N/A[a]	N/A[a]	10	0.7	8	0.6
Other	13[a]	1[a]	2	0.3	3	1.4
Percent Rural Adult Youth						
White	88	97	89	98	89	96
Black	N/A[a]	N/A[a]	9	1	8	2
Other	12[a]	3[a]	2	1	3	2

[a] Blacks were not separately identified until the 1970 Census. Accordingly, the 1960 "Other" category contains all nonwhite groups.

Source: Calculated from *U.S. Census of Population.*

rural youth populations nationally and statewide exhibited markedly lower levels of racial diversity than did their urban counterparts, age group notwithstanding.

C. RACIAL COMPOSITION OF YOUTH POPULATION IN KANSAS COUNTIES

Despite the low overall racial diversity of the state youth population, there were significant differences between counties and regions within the state. Certain counties and regions had highly diverse youth populations while others were totally white.

Rather than analyze each county, however, this section will concentrate on groups of counties meeting certain criteria. Table 19 lists those counties which were significantly less racially diverse than the state as a whole. The benchmark used in formulating this table was the percent of white youth in the total teen and adult youth populations in the state for each census year. If a county exceeded the state average by 10% or more (or had 100% of its youth in the white group), it was considered less racially diverse than the state overall. The average rates used were:

Year	Teen Youth	Adult Youth
1960	96%	95%
1970	94	93
1980	90	89

Two counties, Cheyenne and Comanche, had 100% of both teen and adult youth populations in the white group for all three census years. In addition, there were five other counties which consistently had low levels of racial diversity among their teen youth populations and two counties with low adult youth racial diversity for all three census years. Of these nine counties, only Comanche was located in a region of the state (south-central) other than the north-central or northwest. This would seem to indicate that the north-central and northwest regions were consistently less racially diverse than the rest of the state.

Table 20 identifies those counties which were more racially diverse than the state average. Again, a variance from the state average of 10% or more was used as a benchmark. Therefore, each of the counties listed had a white proportion of its teen or adult youth population of 90% of the state average or less.

Another way of identifying racially diverse counties is to apply the 10% guideline to the state average proportions for nonwhite youth in each year. This means that a county is considered racially diverse if its percentage of either/or both black and/or "other" youth exceeds the state average by at least 10%. The advantage of this classification method is that it allows identification of the racial nature of the diversity in each county.

The average proportions for each year and group were:

Year	Group			
	Teen Black	Adult Black	Teen Other	Adult Other
1960	N/A	N/A	4%	5%
1970	5%	5%	1	2
1980	7	7	3	4

Table 21 identifies those counties which had at least 110% of the above-listed state averages in one or more nonwhite racial groups.

As the 1980 data show, black youth was most heavily concentrated in the northeast section of the state (five of the eight counties with high black proportions of total youth are in the northeast part of Kansas) and least represented in the north-central and southwest sections. "Other" youth was overwhelmingly concentrated in the southwest part of the state, followed by the northeast and south-central sections. They were least concentrated in the southeastern and north-central counties.

Among nonwhite teen youth, the patterns were very similar. Black teen youth were concentrated in the northeast and "other" teen youth in the southwest, although the south-central region followed closely. Nonwhite adult youth were distributed as were youth overall, with black adult youth concentrated in the northeast and "others" concentrated in the southwest.

According to these data, the least racially diverse region of Kansas was the north-central, followed by the southeast and northwest. The most diverse were the southwest and northeast. Patterns between teen and adult youth populations were very similar in all regions except the south-central. There were six counties with high levels of "other" teen youth in the south-central region, but only two with high levels of other adult youth. This may indicate that, as members of the "other" group grow old enough to enter the labor force, they migrate from the region to do so. Interestingly, while the southwest region was the most racially diverse with respect to youth in the "other" group, none of the counties in that region had high levels of black youth. The southwest region lacks large metropolitan areas and its economy is primarily agricultural and energy related, industries which traditionally attract non-blacks and non-whites.

IV. Conclusions and Policy Implications

As the preceding discussion has demonstrated, the Kansas youth population has been quite similar to its counterpart national population in some aspects yet quite different in certain other aspects. Furthermore, there have been important intrastate differences in the concentration and composition of the youth populations of counties and regions within Kansas. Accordingly, policies designed to ad-

If employment and training problems of adult youth are not resolved before they reach the next age group, policymakers may well be looking at a new target group for job assistance—the young adults who traditionally have been relatively free from employment problems.

Male youth in Kansas is more highly concentrated in certain counties than female youth. While certain strategies may be appropriate for concentrated populations, addressing the employment problems of a widely scattered female population would seem to be quite another matter.

dress the employment and training problems of youth necessarily must be tailored to the characteristics of the pertinent population.

The following observations should be considered in developing youth employment and training policies in Kansas.

- The size of the adult youth population has steadily increased while the relative size of the teen youth group has declined. In considering employment and training needs of these groups, it is important to recognize that the older youth may need greater access to vocational education rather than general secondary education and that they may have more urgent work experience requirements.
- Obviously, the adult youth group will continue to age as it moves out of the youth population, and the next age group (25-34)

Table 19

Counties Whose Youth Populations Were Less Racially Diverse than the Total State Population: 1960, 1970, and 1980

	Teen Youth	Adult Youth
1960[b]	Cheyenne[a] Clark[a] Cloud[a] Comanche[a] Decatur Edwards[a] Ellis[a] Haskell Jewell[a] Kingman[a] Lane[a] Lincoln[a] Martin Osborne Ottawa Rawlins[a] Republic[a] Sheridan[a] Sherman Smith[a] Thomas[a] Washington Wichita[a] Wilson Woodson[a] *25*	Anderson Cheyenne[a] Clark[a] Clay Cloud[a] Comanche[a] Edwards[a] Elk Ellis[a] Gove Grant Greeley Greenwood Jewell[a] Kearny Kingman[a] Lane[a] Lincoln[a] Ness Rawlins[a] Republic[a] Rush Scott Sheridan[a] Smith[a] Stanton Thomas[a] Wichita[a] Woodson[a] *29*
1970[b]	Cheyenne[a] Clark Cloud Comanche[a] Decatur Hamilton Haskell[a] Jewell Kingman Kiowa[a] Lane Lincoln Linn Morton Ness[a] Norton Republic Washington[a] *18*	Cheyenne[a] Comanche[a] Ellsworth Haskell[a] Kiowa[a] Ness[a] Sheridan Trego Washington[a] Wichita *10*
1980[c]	Barber (100)[a] Cheyenne (100)[a] Clay (99.4)[a] Cloud (99.5)[a] Coffey (100)[a] Comanche (100)[a] Decatur (100)[a] Elk (99.2)[a] Gove (100)[a] Jewell (100)[a] Kiowa (100)[a] Ness (100)[a] Osborne (100)[a] Ottawa (100)[a] Phillips (99.3)[a] Pottawatomie (99.2)[a] Republic (99.6)[a] Rooks (100)[a] Rush (99.3)[a] Sheridan (100)[a] Smith (100)[a] Trego (99.7)[a] Washington (99.4)[a] *23*	Anderson (99.4) Barber (98.7)[a] Chautauqua (98.8) Cherokee (98.9) Cheyenne (100)[a] Clay (98.1)[a] Cloud (98.2)[a] Coffey (99.8)[a] Comanche (100)[a] Decatur (100)[a] Dickinson (98.0) Elk (98.0)[a] Gove (100)[a] Greenwood (99.4) Hamilton (98.1) Harper (98.9) Jackson (99.0) Jefferson (99.5) Jewell (100)[a] Kingman (98.1) Kiowa (99.1)[a] Lincoln (98.4) Linn (99.1) Logan (99.4) Morris (98.1) Nemaha (99.7) Ness (100)[a] Norton (98.8) Osage (98.7) Osborne (99.4)[a] Ottawa (98.5)[a] Phillips (99.3)[a] Pottawatomie (98.6)[a] Rawlins (98.9) Republic (99.7)[a] Rooks (99.0)[a] Rush (99.5)[a] Russell (99.2) Sheridan (100)[a] Smith (100)[a] Thomas (98.0) Trego (98.8)[a] Wabaunsee (98.2) Washington (100)[a] Wilson (98.5) *45*

[a] These counties had a low level of racial diversity in both teen and adult youth categories in one year.

[b] For 1960 and 1970, each of the counties listed had 100% of teen or adult youth in the white group. This does not necessarily mean that the actual number of nonwhite youth in 1960 and 1970 was zero. It means that according to census data there were so few nonwhite youth counted that their percentage representation was equal to 0%.

[c] For 1980, each of the counties listed in the teen youth category had at least 99% of its teen youth population in the white group. For those listed in the adult youth category, at least 97.9% of their adult youth populations were white. The numbers in parenthesis give the actual percentages according to census data. Again, as in note a, a county with 100% white does not necessarily mean that there were no nonwhite youth in that county.

Source: Calculated from *U.S. Census of Population.*

BEST AVAILABLE COPY

Table 20

Counties Whose Youth Populations Were More Racially Diverse than the Total State Population: 1960, 1970, and 1980

	Teen Youth	Adult Youth
1960[b]	Douglas (86.0) Wyandotte (81.5) *2*	Wyandotte (84.8) *1*
1970[c]	Geary (82.1) *1*	Wyandotte (81.0) *1*
1980[d]	Geary (75.8) Grant (79.6) Wyandotte (63.8) *3*	Geary (50.7) Grant (80.1) Leavenworth (78.5) Wyandotte (71.1) *4*

[a] The number in parenthesis is the actual white percentage of total youth in that category.

[b] To be classified as more racially diverse than the state overall, a county in 1960 had a white teen youth percentage of 86.4% or less or a white adult youth percentage of 85.5% or less.

[c] To qualify as a more racially diverse county in 1970, the county had a white teen youth percentage of 84.6% or less or a white adult youth percentage of 83.7% or less.

[d] To be considered a more than average racially diverse county in 1980, a county had a white teen youth percentage of 81.0% or less or a white adult youth percentage of 80.1% or less.

Source: Calculated from *U.S. Census of Population.*

will grow. If employment and training problems of adult youth are not resolved before they reach the next age group, policymakers may well be looking at a new target group for job assistance—the young adults who traditionally have been relatively free from employment problems.

- While Kansas youth are becoming increasingly concentrated in urban (particularly SMSA) areas, the state's overall rural character will assure that the concentration of youth in rural areas remains higher than the national average. This fact may lessen certain of the problems associated with very high concentrations of youth in urban areas which lack employment opportunities in agricultural or mining industries. At the same time, however, it creates additional problems, particularly related to the efficiency of delivering a full range of employment and training opportunities to what is essentially a widely scattered target population. Furthermore, there is no reason to assume that rural youth suffer less (particularly in the long run) than urban youth from insufficient human capital development or that their expectations are any less emergent. Therefore, in some respects, the problems policymakers face in Kansas may be worse than those in the "average" state, simply because Kansas youth are both concentrated in urban areas and widely scattered throughout the rural portions of the state.

- There does not seem to be any good reason to address youth employment and training problems the same way across the state. Based on the concentration and composition data presented here, the various regions of the state demonstrate some fundamental differences which would make blanket policies ineffective. For example, the north-central region of the state had low levels of youth compared to the northeast sector whose concentration of people between 14 and 24 was increasing fairly rapidly. In this case, there are two adjacent areas of the state which would appear to need youth-related programs of very different kinds

- Composition data further reinforce the need for at least regional and, possibly, county-by-county as opposed to statewide strategies. Vast portions of the state (primarily rural) remain virtually all white. Yet other parts of the state (notably the northeast and southwest) have significant populations of black and "other" race youth. The employment and training needs of black teen youth and those of white teen youth may be quite distinct, and planners, particularly in high racial diversity areas, must be aware of the possible differences.

- The question of sex differences also poses challenges to state policymakers. While Kansas youth overall was distributed by sex about like the U.S., again there were important regional differences. Certain counties, for example Gove, had overwhelming imbalances of one sex as opposed to the other, and, therefore, state human resource planners may face more difficult problems than their national counterparts. Specifically, male youth in Kansas is more highly concentrated in certain counties than female youth. While certain strategies may be appropriate for concentrated populations, addressing the employment problems of a widely scattered female population would seem to be quite another matter.

In short, due to the comparative vastness of Kansas and the significance of both urban and rural populations, the state's youth may not be viewed as homogeneous. This fact means that planners quite likely face numerous, very specialized clientele in the youth population—clientele whose needs and problems could be expected to be distinct. Furthermore, the aging of the population in general and, more specifically, of the youth population presents some interesting challenges, not the least of which is to prevent, or at least prepare for, employment problems among the 25-34 age group.

Footnotes

[1] Yoram Ben-Porath, "Production of Human Capital and the Life Cycle of Earnings," p. 130 in *Investment in Human Capital*, B. F. Kiker, editor; 1971, University of South Carolina Press.

[2] This article was adapted from a monograph submitted as part of the Institute's Labor Market Information Project which was funded by the Governor's Special Grant Component of CETA and sponsored by the State Employment and Training Council and the Kansas Department of Human Resources. Research assistance for the monograph was provided by Nancy Johnson, Frank Hefner, Debi Hartman, and Karen Redwood.

[3] For purposes of this analysis, north-central Kansas is defined as the area including 22 counties bounded by Washington, Marion, Rush, and Phillips counties.

[4] The preceding comments concerning the inconsistencies of SMSA designations are particularly relevant to this table.

[5] High level defined as at least 54% as compared with the statewide rate of 49%.

[6] High level defined as at least 57% as compared with the statewide rate of 51%.

Table 21

Counties More Racially Diverse than the State Average (Exceeded the Average by at Least 10% for a Particular Non-White Group): 1960, 1970, and 1980

	Teen Youth	Adult Youth
1960[b]	Atchison (7.6) Douglas (14.0) Geary (8.1) Jackson (4.5) Labette (5.3) Leavenworth (7.0) Montgomery (7.7) Riley (5.7) Sedgwick (6.3) Shawnee (7.9) Wyandotte (18.5) *11*	Atchison (5.9) Douglas (10.3) Geary (11.6) Labette (5.8) Leavenworth (11.5) Montgomery (5.8) Riley (6.2) Sedgwick (7.0) Shawnee (6.9) Wyandotte (15.2) *10*
1970[c]	(Black) Atchison (9.0) Geary (15.5) Leavenworth (7.7) Montgomery (7.6) Sedgwick (9.0) Shawnee (8.7) Wyandotte (21.2) *7*	(Black) Geary (10.7) Leavenworth (12.5) Montgomery (7.1) Riley (7.6) Sedgwick (7.4) Shawnee (6.7) Wyandotte (18.3) *7*
	(Other) Brown (4.9) Cowley (1.3) Douglas (1.8) Geary (2.4) Jackson (4.9) Kearny (2.3) Labette (1.3) Lyon (1.3) Riley (1.2) Shawnee (1.2) *10*	(Other) Barton (3.3) Brown (4.0) Douglas (5.7) Jackson (4.2) *4*
1980[d]	(Black) Atchison (9.3) Geary (19.3) Leavenworth (8.9) Montgomery (8.9) Sedgwick (13.3) Shawnee (10.2) Wyandotte (32.7) *7*	(Black) Geary (26.3) Leavenworth (17.[illegible]) Montgomery (8.3) Riley (15.0) Sedgwick (9.9) Shawnee (8.2) Wyandotte (23.9) *7*
	(Other) Edwards (6.1) Ellsworth (4.1) Finney (17.8) Ford (6.9) Geary (4.9) Grant (20.4) Greeley (7.3) Hamilton (6.2) Harvey (4.8) Haskell (9.1) Hodgeman (13.3) Kearny (16.4) Lyon (6.3) Morton (6.4) Pawnee (4.7) Reno (3.9) Riley (4.0) Sedgwick (3.9) Seward (10.1) Shawnee (5.3) Sherman (7.9) Stafford (3.3) Stanton (14.6) Stevens (9.3) Wallace (5.2) Wichita (15.2) Wyandotte (5.5) *27*	(Other) Clark (15.3) Edwards (7.4) Finney (14.3) Ford (7.5) Geary (23.0) Grant (19.9) Greeley (7.9) Haskell (11.2) Kearny (12.4) Morton (9.0) Reno (4.4) Riley (4.4) Seward (10.9) Sherman (4.7) Stanton (12.1) Stevens (8.9) Wichita (15.2) Wyandotte (5.0) *18*

[a] The number in parenthesis is the actual percentage of the category in that racial group.

[b] For 1960 there was no separate black category. Accordingly, the counties listed had nonwhite (other) percentages of teen youth of at least 4.4% and of adult youth of at least 5.5%.

[c] To be listed for 1970, a county had to meet one or more of the following criteria:

- black teen youth percentage of at least 5.5%;
- black adult youth percentage of at least 5.5%;
- other teen youth percentage of 1.1% or more; and
- other adult youth percentage of 2.2% or greater.

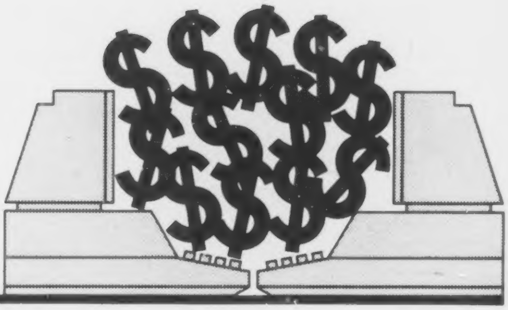
[d] To qualify for the 1980 list, a county had to meet at least one of the following criteria:

- black teen youth percentage of at least 7.7%;
- black adult youth percentage of 7.7% or more;
- other teen youth percentage of 3.3% or greater; and
- other adult youth percentage of at least 4.4%.

Source: Calculated from *U.S. Census of Population.*

BEST AVAILABLE COPY

Filling the Seed Capital Gap for Technology-Based Entrepreneurs



William E. Wetzel, Jr.

Dr. William Wetzel, Jr. is a Professor of Business Administration at the Whittemore School of Business and Economics at the University of New Hampshire and a member of the Board of Directors of Venture Capital Network, Inc. He has published extensively in the area of informal venture capital sources as well as in the areas of commercial banking and new enterprise development. The following article is published as a service to the small business community in Kansas and the region in an effort to address the contents of *Kansas Business Review (KBR)* more specifically to the needs of this vital sector of the area economy. As noted in the preceding issue of *KBR*, this study's appearance marks the beginning of a cooperative arrangement between the Institute for Economic and Business Research and the Small Business Development Center at the University of Kansas to publish on an ongoing basis articles and research notes of particular interest to small businessmen and women in the area.

Introduction

Raising the first piece of outside equity capital is often the ultimate obstacle confronting an entrepreneur attempting to launch a technology-based venture. Of the five thousand or more "high tech" start-ups per year, less than 10 percent are financed by the formal venture capital industry, including the new seed capital funds. High tech start-ups that are unlikely to grow to $20 million in revenues in five years, that will become publicly held in the foreseeable future, or that require one million dollars or more of early stage financing are faced with a gap in the institutional risk capital market. Entrepreneurs confronting this gap frequently turn to individual investors, commonly called business angels, for financing.

Business angels are a diverse and dispersed population of individuals of means, many of whom have created their own successful ventures and who provide the benefit of their experience as well as their capital to ventures they support. By providing seed capital for inventors and start-ups and equity financing for established small firms, angels fill a void in the institutional risk capital markets. Risk capital financing in amounts between $50,000 and $500,000 is a vital resource for many entrepreneurs. This niche in the capital markets is the domain of angels. Despite their low profile, considerable evidence suggests that individual investors represent the largest pool of risk capital in the country. But they are tough to find.

The U.S. Small Business Administration's Office of Advocacy was the "angel" for the study from which this article was drawn.[1] With seed capital from the SBA, a hunt for business angels was undertaken in an attempt to learn more about this invisible segment of the risk capital markets. The search turned up 133 investors who fit the description of a business angel, a sample large enough to at least draw tentative conclusions about the characteristics of angels. However, because considerable additional work is required before definitive statements can be made about the functioning of the informal risk capital market, this work focuses solely on the role of the informal investors as a source of funds for three types of investment situations: 1) financing technology-based inventors, 2) start-up and early stage financing for emerging firms, and 3) equity financing for small, established firms growing faster than internal cash flows can support—three areas typically cited as gaps in the capital markets for smaller firms. The results of this research are summarized in the following sections, as are the lessons the results contain for entrepreneurs.

I. Investor Profile

A. INVESTMENT RECORD

The sample of angels reported risk capital investments totaling over $16 million in 320 ventures during the five years from 1976 through 1980, an average of one deal every two years for each investor. The average size of their investments was in the neighborhood of $50,000, while the median size was about $20,000. Thirty-six percent of past investments involved less than $10,000, while 24 percent involved over $50,000. In 60 percent of past financings, investors participated with other individuals in larger transactions. The propensity to participate with other financially sophisticated individuals permits venture financing approaching the minimum size criteria of profssional venture capital firms and SBICs.

B. VENTURE LIFE-CYCLE PREFERENCES

Historically, informal investors have been the principal source of external seed capital for entrepreneurs. The age distribution of ventures receiving financing from the sample of angels is consistent with this record. Forty-four percent of past financings were start-ups, and 80 percent involved ventures less than five years old. If the definition of a start-up is tied to the achievement of break-even operations, rather than age, 63 percent of past investments were in start-up situations. With respect to future investments, 78 percent of the sample expressed a "strong interest" in start-up and early stage financing for emerging firms. The

Professional venture capitalists have no interest in inventors. However, one third of the sample of informal investors expressed a "strong interest" in financing technology-based inventors.

lesson for entrepreneurs is clear: If entrepreneurs are looking for seed capital to launch a new venture, they should look for one or more angels.

For technology-based inventors the lesson is even clearer. Professional venture capitalists have no interest in inventors. However, one third of the sample of informal investors expressed a "strong interest" in financing technology-based inventors. In addition to capital, an angel with technical and managerial experience can bring a "sense of the market" to the work of an inventor. When asked whether their interests were limited to specific fields of technology, the areas most frequently cited by investors were electronics, computers, energy, and health care. However, the principal criterion cited by these investors was that the technology be in a field that they understood and could evaluate for themselves.

Approximately one investor in five expressed a "strong interest" in equity financing for established firms. Investors interested in established firms anticipated larger investments (in the neighborhood of $75,000 in any one firm). In the sample of angels, the incidence of advanced technical training and start-up management experience was lower among investors interested in established firms than among investors interested in either technology-based inventors or in early stage financing for emerging firms.

C. VENTURE RELATIONSHIPS

Both informal investors and professional venture investors typically contribute more than capital to the situations in which they invest. They are active investors, generally playing a consulting role or serving on a working board of directors. The investors in the sample are no exception. They are a well-educated group and experienced in the management of start-up situations. Ninety-five percent hold four-year college degrees and 51 percent have graduate degrees. Of the graduate degrees, 44 percent are in a technical field and 35 percent in business or economics, generally an MBA. Three quarters of the sample reported having been involved in the start-up of a new venture.

The relationship between angels and their portfolio firms was tested by asking investors about the nature of their contact with portfolio firms. Passive investors were defined as those whose contact consisted of receiving periodic reports and attending stockholder meetings. Active investors were defined as those whose relationship included one or more of the following roles: membership on the board of directors, a consulting role, part-time employment, or full-time employment. Eighty-four percent reported that they expect to play an active role, typically an informal consulting role or service on a working board of directors. The entrepreneur's task, in addition to raising capital, is to find investors with a combination of training and experience that will contribute to the venture's success. For first-time entrepreneurs, this resource can be more valuable than capital.

II. Investment Profile

A. GEOGRAPHIC PATTERNS

The tendency of informal investors to maintain close working contact with ventures they finance is reflected in the geographic distribution of their portfolios. Three quarters of the firms financed by the sample of angels were located within 300 miles of the investor (roughly one day's drive). Fifty-eight percent were within 50 miles. The geographic distribution of portofolio ventures may also reflect the absence of systematic channels of communication between investors and entrepreneurs. The likelihood of an investment opportunity coming to an individual investor's attention increases, probably exponentially, the shorter the distance between the two parties. Whatever the reason, the lesson for entrepreneurs looking for angels reads: "Look close to home."

B. INDUSTRY PREFERENCES

Risk capital investors, both professional and informal, display a broad range of industry preferences. The fields that interest professional venture firms are described in Stanley Pratt's *Guide To Venture Capital Sources*,[2] but information about the tastes of angels is harder to come by.

The sample of angels in this study reported a clear preference for manufacturing enterprises in general, and for "high technology" manuacturing in particular. Sixty-four percent of these investors expressed a "strong interest" in high technology manufacturing, 33 percent in industrial product manufacturing, and 30 percent in service firms. Only 5.0 percent expressed a "strong interest" in wholesale trade, 3.0 percent in retail trade, and 1.0 percent in transportation firms. Even in the least attractive categories (retail trade, wholesale trade, and transportation), one investor in three reported either a "moderate" or "strong" investment interest. What these patterns say to entrepreneurs is: first, some types of ventures attract much more interest than others, and second, somewhere there is an angel interested in backing a viable opportunity in virtually any business or industry category.

C. EXIT EXPECTATIONS

Risk capital is "patient money." Returns take the form of long-term capital gains realized after an extended period during which an investment possesses little or no liquidity or marketability. Liquidation expectations with respect to timing and method are variables that influence risk capital investment decisions. Forty-seven percent of the sample's investors reported that provisions for liquidating their investment were "definitely" or "generally" included in the initial investment agreements.

The "patience level" of informal investors was tested in terms of expected holding periods. The median expected holding period was five to seven years. Of particular interest to entrepreneurs is the fact that 24 percent of the sample either consider the holding period unimportant or expect to hold their risk capital investments longer than 10 years, a "patience level" well in excess of the typical expectations of venture capital firms.

Patience and shared exit expectations are particularly critical for ventures with limited prospects for an eventual public offering or acquisition by a larger firm. Patience is a virtue, and angels tend to be virtuous.

D. REJECTED PROPOSALS

The "typical" angel seriously considers and rejects two or three investment opportunities per year. Most common reasons cited for rejection were lack of confidence in management; unsatisfactory risk/reward ratios; absence of a well-defined business plan; the investor's unfamiliarity with products, processes, or markets; or the venture was not a business the investor "wanted to be in." For entrepreneurs, several lessons stand out: 1) be realistic about the prospects for the venture and about the risks and costs of venture investing, 2) be sure all essential management functions are staffed with experienced, committed individuals, and 3) be aware that a comprehensive, documented business plan is an essential fund-raising tool.

III. Investor Expectations

A. REWARD EXPECTATIONS

This study attempted to assess the cost of risk capital by surveying investors about their reward expectations. The world is populated with risk-averse individuals, venture investors included. Risks and, consequently, required rewards vary substantially over the spectrum of risk capital investment opportunities.

The entrepreneur's task, in addition to raising capital, is to find investors with a combination of training and experience that will contribute to the venture's success. For first-time entrepreneurs, this resource can be more valuable than capital.

Within defined risk categories, two questions dealing with rate of return expectations were posed. The first dealt with the "upside potential" of the most successful venture in a 10-investment portfolio, an attempt to identify the expectations of returns on "winners." Presumably, all investments of a given type possess the upside potential of a winner at the time an investment is made. Expected returns on winners represent the cost of risk capital to successful inventors and entrepreneurs. This cost is substantially higher than the average cost of risk capital for a given type of investment. Investors recognize that many expected winners turn into losers. Substantial returns on the real winners must offset the losers and provide an adequate return on a portfolio of risk capital investments. The second question dealt with portfolio rate of return expectations, e.g., the average cost of risk capital.

With respect to "winners," investor expectations ranged from median five-year returns of 50 percent per year and capital gains multiples of ten times for inventors and start-up firms; to 38 percent per year and six times for firms under one year old; 30 percent per year and five times for firms under five years old; to 23 percent per year and three times for established firms. Rate of return expectations were widely dispersed around these medians, reflecting the diversity of the informal investor population. With respect to minimum acceptable portfolio returns, median expectations were a consistent 30 percent compound annual rate and a five-year capital gains multiple of three times for all portfolios except established firms, where minimum portfolio returns were 15 percent annually and capital gains multiples of only two times in five years.

The data suggest several observations of interest to entrepreneurs. First, risk capital is expensive. Despite every entrepreneur's confidence in his or her "sure thing," investing in entrepreneurs is risky in the extreme, and investors must be paid to take risks. Second, given the extraordinary risks inherent in venture investing, the overall level of both "winner" and portfolio expectations seems low when compared to the range of expectations usually attributed to professional venture capital firms. The relatively low cost of informal risk capital may be due in part to the nonfinancial rewards that often motivate informal investors.

B. NONFINANCIAL REWARDS

The influence of nonfinancial factors is a characteristic that distinguishes angels from professional venture capitalists. Professional venture investors consider the financial risk/reward relationship to be paramount. Individual investors, on the other hand, often look for nonfinancial returns from their risk capital portfolios. These nonfinancial returns fall into several categories, some of which reflect a sense of social responsibility on the part of many investors and some of which seem to reflect forms of "psychic income," or so-called "hot buttons," that motivate individuals. The influence of these motivators was explored through a series of questions that posed a form of nonfinancial reward and asked investors which ones, if any, represented substitutes for financial returns. Investors responding affirmatively were then asked how large a reduction in the rate of return would be accepted in exchange for the nonfinancial reward.

The list of nonfinancial considerations included ventures creating jobs in areas of high unemployment, ventures developing socially useful technology (e.g., medical or energy-saving technology), ventures contributing to urban revitalization, ventures created by minority or female entrepreneurs, and the personal satisfaction derived from assisting entrepreneurs build successful ventures.

Nonfinancial considerations affect the decisions of a significant fraction of the sample of angels—45 percent in the case of "assisting entrepreneurs." Between 35 percent and 40 percent of the investors reported that they would accept lower returns (or perhaps assume higher risks) when venture investments create employment in their communities or contribute to the development of socially useful technology. Median rate of return reductions of 20 percent were associated with investments creating employment or assisting minority entrepreneurs. Entrepreneurs sensitive to the match between the characteristics of their ventures and the personal tastes of investors should be able to raise funds on terms that are attractive to both parties.

IV. Referral Sources

In view of the difficulty entrepreneurs encounter in locating potential investors, this study was particularly interested in discovering the channels through which angels most often learn of investment opportunities and their level of satisfaction with these channels. Investors were provided with an illustrative list of sources of investment opportunities and asked to classify each as a "frequent source," "occasional source," or "not a source" of proposals they had seriously considered during the previous five years.

The pattern of "frequent source" responses reveals a network of friends and business associates through whom informal investors typically learn of investment opportunities. Fifty-two percent cited "business associates" as a frequent source, 50 percent cited "friends," and 41 percent cited "active personal search." The next most common source was "investment bankers," cited as a frequent source by 15 percent of the sample of investors. All other sources, including business brokers, commercial bankers, attorneys, and accountants were insignificant.

Tapping this informal network is not easy. Entrepreneurs can expect to find little guidance in finding their way through the maze of channels leading to informal risk capital. By the same token, angels continue to rely largely on random events to bring investment opportunities to their attention. There are no systematic techniques for identifying clusters of individual investors or for assessing their distinguishing investment objectives.

The angels in this sample were asked if they were satisfied with the effectiveness of existing channels of communication between bona fide entrepreneurs seeking risk capital and investors like themselves. "Totally dissatisfied" investors (34 percent) outnumbered "definitely satisfied" investors (8.0 percent) by over four-to-one. Investors were then asked to indicate their interest in an experimental referral service that would direct investment opportunities to their attention. Fifty percent reported a "strong interest" in such a service, and 38 percent reported a "moderate interest."

A. PROFILE FOR A FORMALIZED VENTURE CAPITAL REFERRAL SERVICE

When asked about the characteristics that would be required of such a service, the investors in the study's sample responded that any process organization that seeks to formalize the current informal risk capital market should be able to: 1) make the connections between the investor and entrepreneur as swiftly as possible to preserve the *timeliness* of new products/processes developed, 2) maintain complete *confidentiality* for its clients, investors as well as entrepreneurs, and 3) maintain *objectivity* and avoid evaluating the worth of a capital-seeking venture.

Initially, the referral service would need to identify two separate groups of potential participants and their characteristics. The informal investors would need to be identified and a profile of their particular investment objectives developed. The opportunities for investment would need to be located and the characteristics of the venture compiled. Finally, after the inventorying of the two groups of participants was organized, areas of common objectives could be detailed and potential partners identified.

A referral service of this type should be self-supporting, with investors and entrepreneurs paying user fees to obtain access to the relevant portion of the service's data base.

One such referral service has been developed in New England. Venture Capital Network, Inc., was created by the Business and Industry Association of New Hampshire and is in its first year of development.[3]

Evidence suggests that the aggregate risk capital financing provided by individuals is comparable to the annual flow of funds from professional venture capital firms.

V. Summary

While no comprehensive data are available, scattered evidence suggests that the aggregate risk capital financing provided by individuals is comparable to the annual flow of funds from professional venture capital firms. The data also suggest that the number of firms financed by individuals may be five-to-ten times the number financed by professional venture capitalists.

Tapping the informal investor network is not easy. A formal referral service like Venture Capital Network, Inc. would provide a process for systematically identifying clusters of individual investors, assessing their distinguishing investment objectives, and providing entrepreneurs access to informal risk capital on a timely, confidential, objective, and cost-effective basis.

Footnotes

[1] Wetzel, W.E. and Seymour, C.R., *Informal Risk Capital in New England*, Report to the U.S. Small Business Administration, University of New Hampshire, Durham, N.H., 1981. See also Wetzel, W.E., "Angels and Informal Risk Capital," *Sloan Management Review*, Cambridge, Mass., Summer, 1983.

[2] Pratt, S.E., ed., *Guide To Venture Capital Sources*, 8th ed., Capital Publishing Corp., Wellesley Hills, Mass., 1984.

[3] Further information about Venture Capital Network, Inc., can be obtained from James Hoeveler, Secretary, Venture Capital Network, Inc., 23 School Street, Concord, New Hampshire 03301.

Calendar of Small Business Development Events

Sept. 11-Oct. 4	Starting Your Own Business (Washburn University)
14,15	Women Business Owners Orientation (Johnson County Community Junior College)
15	The Business Plan (Johnson County Community Junior College)
18	Small Business Tax Workshop (Washburn University)
22	The Business Plan (Johnson County Community Junior College)
25	How to Buy Telephone Equipment and Service (Johnson County Community Junior College)
29	The Business Plan (Johnson County Community Junior College)
Unscheduled in September	Financial Management (Pittsburg State University)
	Accounting Concepts (Pittsburg State University)
	Attitude of the Consumer (Pittsburg State University)
	At-Will Doctrine (Pittsburg State University)
Oct. 2	How to Buy Telephone Equipment and Service (Johnson County Community Junior College)

For further information, please call the sponsoring institution.

Economic Conditions

The National Review

The national economy persists in expanding at a faster rate than expected. The revised estimate of the second quarter annualized GNP growth rate was 7.5 percent. When this figure is coupled with the further revised first quarter annualized GNP growth rate of 10.1 percent, the growth rate for the first half of 1984 is 8.7 percent. Other signs that the recovery is moving along strongly include the reductions during the first six months of the unemployment rate to the 7.0 percent range and additional increases in industrial production, capital investment, industrial capacity utilization, and retail sales. In sum, the economy continues to charge ahead at unforeseen speed.

The extent to which this recovery has exceeded expectations can be demonstrated by recalling that last year many economists were forecasting that, as the recovery "matured," the quarterly annualized GNP growth rates for 1984 would decline to the range of 4.0 to 4.5 percent from the better-than-6.0 percent average for 1983. In fact, the growth rates for 1984 are about double what was expected. The major reasons for the surprising strength of the recovery are the prolonged depth of the preceding depression and the massive fiscal stimulus of the current deficits.

The deep depression of 1981-82 contributed to the current recovery in several ways. With any prolonged slump, inefficiency tends to be squeezed from the economy, thus making the economy more efficient at least through the early stages of recovery. In addition, the last depression left resources idle: both human and capital. So, when the economy turned around, growth in the early stages was relatively easy because new capital and skills did not have to be created. Finally, the deep depression helps the recovery in a statistical sense. A brief quantitative example will illustrate this effect. If something drops from 100 to 80 there is a 20 percent decline; however, an increase from 80 to 100 is a 25 percent increase.

Of more importance to the current recovery has been the massive fiscal stimulus of the burgeoning deficits. Despite the claims of "supply-siders," this recovery is indistinguishable from the classical Keynesian recovery lead by deficit spending. The expectation of the "supply-siders" that cutting the marginal tax rates of the rich would raise the savings rate has borne little fruit as of yet. Unfortunately, as a cynic might put it, the rich seem to be able to spend money nearly as rapidly as the spendthrift poor. Even though the tax cuts have not had their intended effect of increasing the savings rate, they have lead to increased spending which means a demand-led recovery, i.e., a Keynesian recovery.

Given the strength currently being demonstrated by the national economy, one might naively assume that economists would be upbeat. It is necessary to keep in mind, however, that economists have the ability, whether innately or through training, to see a gathering thunderstorm on any clear day. If the economy is weak, economists are worried; if the economy is strong, economists are worried.

The major concern among economists is rising interest rates. The prime rate has moved steadily higher since March to the 13 percent level, and the threat exists—despite some encouraging signs in late July and early August—that it will move even higher. Higher interest rates have at least three direct negative effects on the economy. First, high interest rates dampen business investment by raising the cost of borrowing money. Second, they hurt the housing market and the other consumer durable goods markets, such as autos, by pricing many consumers out of the market. Third, higher interest rates raise the deficit by raising the cost of servicing the already existing national debt. For these reasons, most economists agree that higher interest rates would choke-off the current recovery prematurely. What economists cannot agree upon are the causes of the rise in interest rates during the year's first half and what actions should be taken to prevent their rising still higher in the near future.

The monetarists, as usual, are exercised over the money supply which they feel has been expanding too rapidly. During the first half of 1984, the money supply, as measured by M1, expanded at a rate of about 7.25 percent which was close to the upper bound of the Fed's target range of 4.0 to 8.0 percent growth. As a result of this rapid growth in the money supply, inflationary expectations are developing in the financial markets. As evidence of this phenomenon, the monetarists have pointed to the expanding spread between short-term and long-term interest rates. What the monetarists want is for the Fed to cut back on its expansion of the money supply, thus squelching inflationary expectations which will, in turn, lower interest rates, in particular long-term interest rates.

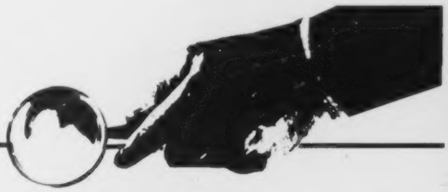
The supply-side school, in direct contrast to the monetarists, feel we are in a period of deflation. To demonstrate this fact, the supply-side school points to several facts. For example, they point to the growth in M1 of 7.25 percent and the growth in GNP during the same period of 8.7 percent and ask how inflationary expectations can be developing: the money supply is actually growing significantly slower than GNP, and that is deflation. The supply-side school also points to the decline in the price of gold from about $500 an ounce in January 1983 to the current price below $350. Finally, they point to the minimal increases in the price indexes, including the flat performance of the Producer Price Index during the summer. With all of this deflation going on, the response from the supply-side school is clear: expand the money supply at a faster rate; what the Fed is currently doing is choking-off the recovery.

Since Paul Volcker has announced that the Fed plans to continue its current policy, neither the monetarists or the supply-siders are happy. However, there is the school of thought which does not blame the high interest rates on monetary policy. For want of a better name, this school could be called the standard neoclassical school with the recognition that several neo-Keynesians have also adopted the policy suggestions of this school. The neoclassicists argue that the interest rate is determined in the investment market by the interactions of the supply and demand for loanable funds. The supply of loanable funds comes from savings while the demand comes from consumers, business, and the federal government. As mentioned earlier, the savings rate has not risen appreciably. However, the demand for loanable funds has increased for each sector. Consumer borrowing has grown rapidly, and business investment is increasing at the fastest rate since the end of World War II. Added to this picture is the U.S. Treasury Department trying to finance the largest peacetime deficits ever. The neoclassicists acknowledge that large deficits do not necessarily cause rising interest rates. For example, both West Germany and Japan have had large deficits with low interest rates. But the case of the U.S. economy is different because our savings rate is so low. As a result of the increasing demand for loanable funds and the basically static supply, interest rates have risen. The policy prescription of the neoclassicists school is simple: cut the deficit. By cutting the deficit, demand for loanable funds will drop, causing the interest rates to also fall.

Whatever the cause of the high interest rates, it seems that nothing, at least in a policy sense, is going to be done about them until after the election. If the Fed follows the path outlined by Paul Volcker during his testimony this summer, then it will continue to expand money at about the same rate as the first half of the year. The President and Congress have agreed on a small attempt to cut future deficits but have agreed on nothing that will take effect before 1985. Thus, for interest rates to fall significantly in the near future, the economy will have to slow down considerably. Some evidence does exist that the economy might be slowing down now, but, given the past record of this recovery, any statements as to its weakening at this moment are premature.

Robert Glass
Research Assistant
The Institute for Economic
and Business Research

The Kansas Economy



The Kansas economy continues toward a return to the 1979 levels of employment. For the past year, the unemployment rate has continuously declined as the number of employed persons has increased. The revival of the auto industry has been one major factor helping the Kansas economy. The other major factor has been the renewed strength of the aircraft industry, in large part fueled by Reagan's massive military build-up. Moreover, if the rest of the industrialized world's economic fortunes improve this year as they are expected to, then the civilian side of the aircraft industry should also get a shot in the arm. The extent to which the civilian aircraft industry is dependent upon international economy conditions is demonstrated by the fact that over 40 percent of Boeing's civilian sales are outside this country. Thus, the outlook for the two major nonfarm sectors of the Kansas economy, autos and aircraft, looks quite good well into 1985.

This brief analysis of the Kansas economy is founded upon one major contention: the major determinant of the Kansas economy's behavior is the national economy. Currently, the most important national economic phenomenon is the high rates of interest discussed above in "The National Review." Trying to determine the impact of these high interest rates on the Kansas economy is difficult. Figures 1 and 2 show the changes, on a quarter-to-quarter basis, of Kansas personal income and the average real prime interest rate. Using a two or three month lag, there is a slight negative linear correlation between Kansas personal income and interest rates. However, trying to discern an obvious pattern between interest rates and the Kansas economy from this data has been futile. At best, it appears that certain sectors of the Kansas economy are interest sensitive. For example, the construction industry in Kansas suffered dramatically in the early 1980s due to the high interest rates.

One additional factor in trying to determine the impact of interest rates on the Kansas economy is that, until the last five years, interest rates had little variability. In the 1940s, 1950s, and early 1960s, the prime would go months, even years, without changing. However, since the 1970s, and particularly since Volcker announced that the Fed would be more concerned with monetary aggregates and less concerned with specific interest rate levels, the prime in particular, and all interest rates in general, has had very erratic behavior patterns (see Figure 3). With this erratic behavior comes uncertainty. Thus, there is some indication that businesses are paying less attention to specific interest rates when making investment decisions.

Robert Glass
Research Assistant
The Institute for Economic
and Business Research

Figure 1
Changes in Kansas Real Personal Income (Quarter to Quarter)

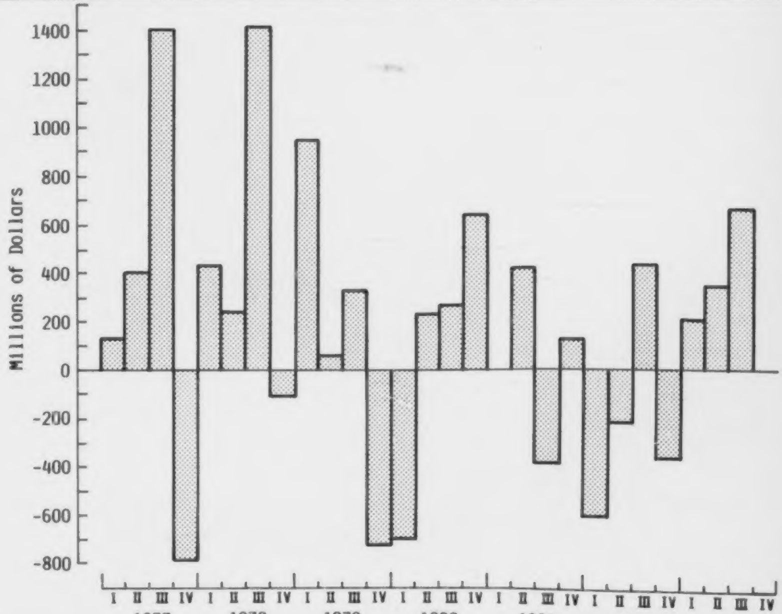


Figure 2
Changes in Average Real Prime (Quarter to Quarter)

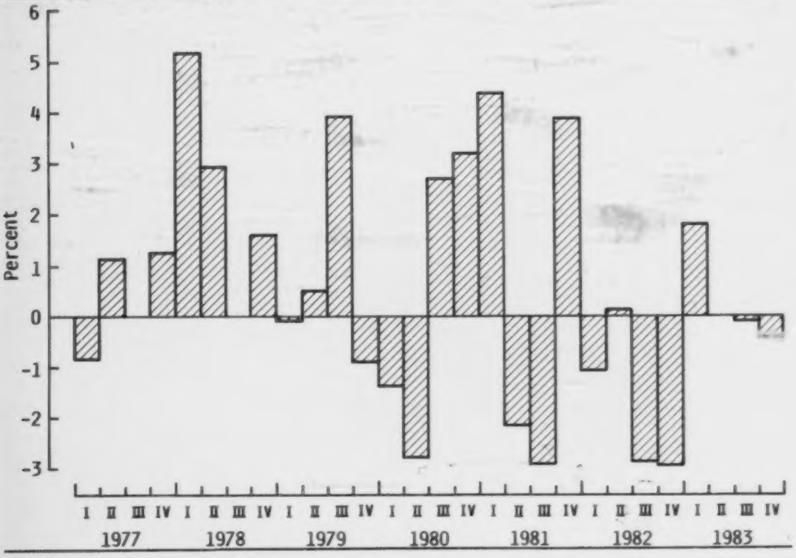
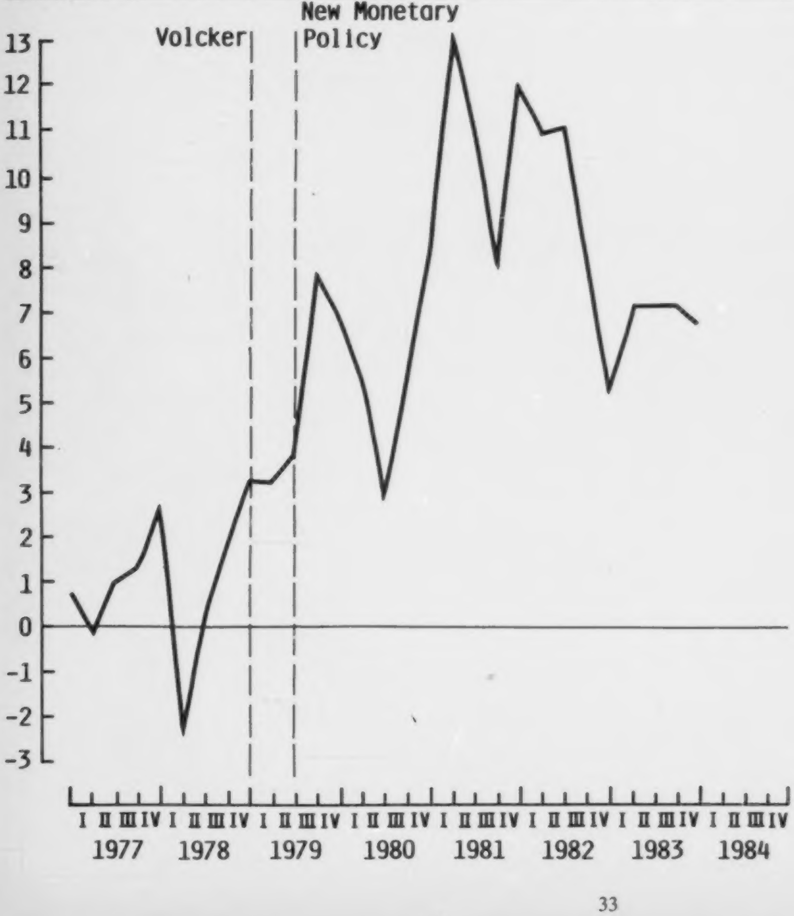


Figure 3
Average Real Prime



Agriculture

Agriculture Census Highlights

Updated information on Kansas agriculture has recently become available through the 1982 *Agricultural Census.*[1] The new data generally reinforce the trends in the state's farm sector documented earlier by Sexton and Cita (*KBR*, 5:6, Summer 1982). Specifically, the number of farms in the state continues to decline.[2] The 1978-82 decline was 856 farms or 1.2 percent of the total. Acreage in agriculture declined slightly during this period as well, with acreage in farms standing at just over 47 million acres, down 0.9 percent from 1978. Nonetheless, 89.9 percent of the state's land area remains devoted to agricultural uses, and, as Sexton and Cita noted, this proportion has remained remarkably stable throughout the twentieth century, indicating, in turn, that the perception of an exodus of land from agriculture is, for the most part, erroneous.

Given that the percent decline in farm numbers and acreage in farms nearly matched, the average farm size increased only slightly, 0.3 percent, from 1978-82. However, this average belies some significant shifting which occurred within farm-size classifications during this period. As Table 1 notes, there was a fairly marked increase in the number of farms under 50 acres and of the very largest farms, those of 2,000 or more acres. The moderate-size categories all recorded declining numbers from 1978-82. This pattern reflects, at one level, the ongoing consolidation of farms into larger and apparently more efficient units. At another level, it reflects a trend towards hobby farms and farms devoted to specialty crops and livestock which generally do not require substantial acreage. These recent patterns in the farm-size classifications also basically reflect the continuation of earlier trends (see, for example, Sexton and Cita's Figure 1).

Examining the distribution of farms according to the primary commodity produced on them seems to confirm the trend of "specialty" farming becoming a more important factor in the state's agriculture. The data, provided in Table 2, show that, while still small in comparative proportion, farms producing animal specialties (fur-bearing animals, rabbits, horses, bees, fish, etc.), vegetables and melons, and fruits and tree nuts experienced the most rapid increase in numbers during the 1978-82 period.

Table 2 also demonstrates divergent growth trends between farms specializing in cash grain production and those concentrating on livestock. The former's number increased by nearly 3,000 or 8.5 percent from 1978-82, while the latter number declined by almost 4,500 or 13.4 percent.

One of the most important observations arising from Sexton and Cita's analysis of

Table 1
Number of Farms in Kansas by Size: 1978 and 1982

Size Class	Number of Farms 1982	 1978	 Percent Change
1 to 9 Acres	3,547	3,186	11.3
10 to 49 Acres	6,837	5,379	27.1
50 to 179 Acres	16,720	16,971	–1.5
180 to 499 Acres	18,693	20,044	–6.7
500 to 999 Acres	13,600	14,871	–8.5
1,000 to 1,999 Acres	9,428	9,501	–0.8
2,000 Acres or More	4,490	4,219	6.4

Kansas agriculture was the surprising concentration of production in the hands of the very largest farms. In 1978, those farms with more than $500,000 in sales were only 0.8 percent of the total number, yet they comprised 45.4 percent of the total agricultural sales. In 1982, total sales of agricultural products were estimated to be 6,191 million dollars, and farms in the $500,000 or more category accounted for 2,866 million dollars of this total or 46.2 percent. The number of "super" farms increased from 604 to 895 between 1978-82, to where they now account for 1.2 percent of all farms.

However, in spite of the trend towards larger and fewer farms, almost all remain family owned and operated. For 1982, 64,313 farms were family owned (87.7 percent of the total), while 6,702 were partnerships and 1,876 were corporations; and yet, 1,665 of these were family-held corporations with 10 or fewer stockholders. Only 181 farms were held by nonfamily corporations, and they totalled 246,736 acres—only about one-half of one percent of the state's total acreage in farming. Thus, the belief that outside corporations are coming to dominate agriculture continues to be yet another myth.

Breaking down the value-of-products-sold figure into its commodity components (Table 3) indicates the prevailing tendency for Kansas to be largely a two-commodity agricultural state. For 1982, beef and wheat accounted for 75.6 percent of the value of all agricultural products sold in Kansas. These two commodities have consistently provided between 70 and 80 percent of the total value of Kansas farm production since the turn of the century.

As Table 3 verifies, none of the state's other farm commodities contribute very significantly to the total value of production. Grain sorghum—the third largest in sales volume—accounted for only 5.7 percent of the total value. The next most important livestock commodity is sheep, lambs, and wool, but it accounted for only 5.1 percent of the total value.

In sum, the 1982 *Agricultural Census* contains little surprising news regarding the Kansas farm sector. Rather, it indicates that the prevailing trends continue to hold: Farms in Kansas are becoming fewer and larger but continue to be family held and run. Production remains concentrated in beef and wheat.

OUTLOOK

Favorable weather conditions through June and into the July harvest phase improved the 1984 Kansas wheat harvest markedly over what had been earlier thought probable. The Kansas crop is expected to total about 420 million bushels which would make it the fourth largest crop on record. The anticipated yield per acre for 1984 is pegged at 38 bushels, below last year's 41.5 bushel rate, and the harvest itself will fall about 30 million bushels below last year's crop and 44 million bushels short of the 1982 record.

Conditions for the winter wheat harvest nationwide have generally improved as well. Recent estimates call for a harvest of 2.02 billion bushels from 51.1 million harvested acres. If this projection is realized, the 1984 crop will slightly exceed last year's 1.99 billion bushel harvest.

Unfortunately, as is often the case in agriculture, favorable production news spells bad news for prices. Carryover stocks have dropped only slightly from last year's record levels, and this year's better-than-anticipated harvest will ensure that they remain high. As well, competition among the wheat exporting countries will remain high, thus causing world prices to stay low and forcing the United States' share of the world market down to 38 percent relative to its 1980-82 average of 45 percent. As such, barring unexpected news on the demand side, wheat prices probably will hover near the loan rate, in the $3.40 to $3.55 range, through most of the upcoming marketing.

The direct impact of low prices on farmers' income will be mitigated by the relatively strong rate of sign-up for the 1984 acreage reduction plan. Final figures indicate that 61 percent of the wheat acreage base is enrolled, meaning that the majority of wheat growers will be eligible for target pricing and production loans. The program's PIK component, however, is expected to idle only 3.6 million acres compared to 17 million last year.

It is presently anticipated that Kansas farmers will harvest 3.8 million acres of sorghum for grain and that the soybean harvest will involve 1.7 million acres. Both of these fig-

Table 2
Number of Farms in Kansas by Major Commodity Produced: 1978 and 1982

Commodity Group	Number of Farms 1982	 1978	 Percent Change
Cash Grains	37,211	34,287	8.5
Field Crops, Except Cash Grains	1,666	1,876	–11.2
Vegetables and Melons	146	127	15.0
Fruits and Tree Nuts	175	142	23.2
Horticultural Specialties	230	237	– 3.0
General Farms, Primarily Crop	1,349	1,329	1.5
Livestock Except Dairy, Poultry and Animal Specialities	28,322	32,712	–13.4
Dairy Farms	1,804	1,839	– 1.9
Poultry and Eggs	232	234	– 0.9
Animal Specialties	1,129	579	95.0
General Farms, Primarily Livestock	1,051	809	29.9

Table 3
Market Value of Agricultural Products Sold by Commodity: 1982

Commodity	1982 Value of Sales ($1,000)	Percent of Total Sales
Corn for Grain	263,913	4.3
Wheat	1,162,533	18.8
Soybeans	215,700	3.5
Sorghum for Grain	350,628	5.7
Total Grains	2,009,729	32.5
Poultry and Poultry Products	25,755	0.4
Dairy Products	162,232	2.6
Cattle and Calves	3,516,670	56.8
Sheep, Lambs, and Wool	316,882	5.1
Total Livestock, Poultry and Products	4,047,815	65.4
Hay, Silage, and Field Seeds	100,169	1.6
Total Sales	6,190,861	

ures are markedly higher than last year's total (41 percent and 11 percent, respectively). Corn acreage harvested is expected to be up slightly, as well, to 925 thousand acres from 880 thousand last year.

As last year's experience demonstrated, forecasts at this time of year for the fall harvest crops can be extremely tenuous. Nevertheless, if current projections are realized, U.S. production of corn, sorghum, and soybeans will rebound sharply from last year's poor harvests. In fact, based on the present forecasts, the 1984 corn harvest will nearly double last year's, and soybean production will significantly exceed 1983 levels as well.

Strong harvests will naturally exert downward pressure on prices in these markets also, but, because last year's harvest of feed grains and oil seeds was so small, entry stocks for the 1984-85 marketing year have been reduced considerably. While likely to be below year-ago levels, prices for corn, sorghum, and soybeans will, therefore, remain high relative to wheat prices and their levels of two years ago. This combined effect in Kansas will offset somewhat the negative effect which this year's wheat market will have on the state's farm income.

The number of cattle on Kansas feedlots as of May totaled 1,330,000 head, up 8.0 percent from last year. Net feedlot placements, however, were down in Kansas and for the other major livestock states as well through the spring months. The beef slaughter, meanwhile, was up considerably in May when 2.06 billion pounds were marketed. Kansas production in May totaled 508 million pounds (live weight), up 20.4 percent from last year.

Not surprisingly, the increased slaughter has had a depressing effect on cattle prices. The all-beef cattle price in Kansas fell to near $60.00/cwt in May and June from about $65.00 in April. The reduced rate of placements during the spring months is, however, expected to contribute to a reduction in beef production from year-ago levels during the second half of 1984. This tightening of supplies should soon begin to help firm up the auction markets with the all-cattle average moving back into the mid-$60s range in Kansas by late summer or fall.

Higher beef production sold at good prices will boost Kansas farm income for 1984. Receipts from crop production, while highly uncertain at this point, may be somewhat higher as well with higher feed grain and oil seed production offsetting the effects of the lower wheat harvest. Another factor tending to raise Kansas farm income in 1984 is the fact that a good portion of the distribution from the 1983 PIK plan has been made in 1984. Finally, although total production expenses will be higher in 1984 due to the increased acreage under tillage, the rise in production costs continues to be very moderate. For example, the Index of Prices Paid by Farmers rose only 3.4 percent for the year ending in May.

As such, the farm sector in Kansas should be somewhat improved in 1984 relative to last year and to the immediately preceding years as well. It can be expected, therefore, to contribute, but only in small part, to the state's general economic recovery.

__Richard Sexton__
__Research Economist__
__The Institute for Economic__
__and Business Research__

Footnotes

[1] Bureau of the Census, *1982 Census of Agriculture*, Volume 1, Geographic Area Series, Part 16, Kansas State and County Data, U.S. Department of Commerce, April 1984.

[2] The current criterion for defining a farm is any place from which $1,000 or more of agricultural products were sold or would normally have been sold for the census year.

Economic Indicators

TABLE ONE: ECONOMIC INDICATORS

Comparison Indicators		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Personal Income - Quarterly, at annual rates, SA.						
Kansas - Mil. $	1st	32,751.0	30,916.0	28,971.0	5.9	13.1
United states - Bil. $	1st	3,550.1	3,436.2	2,073.0	3.3	71.3
B. Employment - Quarterly						
Kansas - Tho.	2nd	1,218.2	1,181.3	1,211.0	3.1	5.9
United States - Mil.	2nd	113.8	112.6	100.5	1.1	13.2
C. Unemployment Rate - Quarterly						
Kansas - %	2nd	4.6	4.4	5.4	-	-
United States - %	2nd	7.5	7.9	10.4	-	-
D. Retail Sales - Monthly, at annual rates						
Kansas - Mil. $	MAY					
United States - Bil. $	MAY	107.3	107.1	97.2	.2	10.4
E. Consumer Price Index, CPI-U, All items - Monthly						
Kansas City* - 1967=100	JUNE	310.8	309.3	297.4	.5	4.5
United States - 1967=100	JUNE	310.7	309.8	298.2	.3	4.2

Notes: *The Kansas City CPI-U is published bimonthly starting with February.
**Includes only the activity in the state's twelve largest cities (by population).
National employment and unemployment rate figures are based on the Current Population Survey (household survey).
State figures are based on the Current Employment Statistics Survey (establishment survey). Not Seasonally Adjusted NSA. Seasonally Adjusted - SA.

Source: BEA, BLS, KS. Dept. of Human Resources, KS. Secretary of State, KS. Dept. of Administration, KS. Dept. of Revenue.

TABLE TWO: NATIONAL INDICATORS
(Seasonally Adjusted)

General Indicators		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Income Measures - Quarterly, at annual rates.						
Gross National Product - bil. 72$	1st	1,609.3	1,572.5	1,490.1	2.3	8.0
Disposable Personal Income - bil. 72$	1st	1,148.6	1,121.5	1,073.8	2.4	7.0
Personal Consumption - bil. 72$	1st	1,048.3	1,032.2	9,867.0	1.6	6.2
Gross Private Investment - bil. 72$	1st	277.4	245.2	190.0	13.1	46.0
Net Export of Goods & Services - bil. 72$	1st	-7.5	2.8	20.5	-367.9	-136.6
Government Purchases - bil. 72$	1st	291.0	292.3	292.9	-.4	-.7
Personal Savings - bil. 72$	1st	na	na	na	-	-
Savings Rate - %	1st	5.9	5.2	5.4	-	-
B. Labor Force - Monthly						
Civilian Labor Force - mil.	MAY	113.8	113.2	110.9	.5	2.6
Employed - mil.	MAY	105.3	104.4	99.8	.9	5.5
Unemployed - mil.	MAY	8.5	8.8	11.2	-3.4	-24.1
Unemployment Rates - percent						
All -	MAY	7.5	7.8	10.1	-	-
Women -	MAY	6.8	7.0	8.5	-	-
Men -	MAY	6.5	6.9	9.5	-	-
Teens -	MAY	19.0	19.4	23.0	-	-
Blacks -	MAY	15.8	16.8	20.3	-	-
Whites -	MAY	6.4	6.7	8.8	-	-
C. General Business - Quarterly						
Industrial Production - 1967=100	1st	159.8	155.5	138.5	2.8	15.4
Mfg. and Trade Sales - bil. 72$	1st	173.5	169.1	155.2	2.6	11.8
Mfg. and Trade Inventories - bil. 72$	1st	264.9	260.7	258.7	1.6	2.4
New Orders, Durable Goods - bil. 72$	1st	192.0	186.0	151.1	3.2	19.2
Capacity Utilization, Mfg. - %	2nd	81.7	80.7	73.8	-	-
New Housing Starts, Private - tho.	1st	1,968.0	1,699.0	1,464.0	15.8	34.4

2

General Indicators

TABLE TWO: (CONT.)

		Current Period	Previous Period	Year Ago	Previous Period	Year Ago
D. Prices - Monthly						
Consumer Prices - 1967=100						
CPI-W, All Items	JUNE	306.2	305.4	297.3	.3	3.0
CPI-U, All items	JUNE	310.7	309.8	298.2	.3	4.2
Food	JUNE	302.0	301.4	292.9	.2	3.1
Housing	JUNE	336.2	334.6	319.6	.5	5.2
Apparel	JUNE	197.4	198.8	195.6	-.8	.9
Transportation	JUNE	313.1	312.2	298.2	.3	5.0
Medical	JUNE	378.0	376.8	355.3	.3	6.4
Producer Prices - 1967=100						
All Commodities	JUNE					
Industrial Commodities	JUNE					
Crude Materials	MAY	334.3	337.5	321.6	-1.0	4.0
Capital Equipment	MAY	294.4	293.8	286.5	.2	2.8
Agricultural Prices - 1977=100						
Prices Received	JULY	143.0	144.0	131.0	-.7	9.2
Prices Paid	JULY	166.0	166.0	160.0	0	3.6
Parity Ratio - number	JULY	86.0	87.0	82.0	-1.2	4.9
E. Monetary and Credit Aggregates - Quarterly (Annual rates of change, seasonally adjusted in percent.)						
Total Reserves -	1st	6.9	.5	5.5	-	-
M1 -	1st	7.2	4.8	12.8	-	-
Commercial Banks:						
Savings -	1st	-16.2	-6.4	-47.4	-	-
Small Denomination Time -	1st	4.4	19.3	-48.7	-	-
Large Denomination Time -	1st	10.0	-.2	-48.8	-	-
Thrift Institutions:						
Savings -	1st	-5.1	-4.4	-28.6	-	-
Large Denomination Time -	1st	58.6	58.1	.6	-	-
Debt Components:						
Federal -	1st	14.7	13.3	19.4	-	-
Nonfederal -	1st	11.8	9.5	5.9	-	-
Interest Rates - Monthly						
Prime Rate - %	JUNE	12.6	12.4	10.5	-	-
Discount Rate - %	JUNE	9.0	9.0	-	-	-

Sources: BEA, BLS, Survey of Current Business, Federal Reserve Bulletin.

TABLE THREE: EMPLOYMENT IN KANSAS

Category		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. General Indicators - Quarterly						
Civilian Labor Force - tho	2nd	1,218.2	1,181.3	1,211.0	3.1	0.6
Employed - tho	2nd	1,171.9	1,129.1	1,146.0	3.8	2.3
Farm Employment - tho	2nd	64.3	48.4	65.8	32.9	-2.3
Unemployed - tho	2nd	46.3	52.2	65.0	-11.3	-28.8
Initial Claims for Unemployment Insurance - tho	2nd	9.9	13.8	14.6	-28.3	-32.2
Average Work Week, Mfg. - hrs	2nd	40.1	40.0	38.9	0.3	0.1
B. Industry Employment - Quarterly, in thousands						
All Industries -	2nd	942.7	922.5	919.4	2.2	2.5
Manufacturing -	2nd	176.3	172.4	164.2	2.3	7.4
Durable Goods -	2nd	107.0	104.3	97.6	2.6	9.6
Fabricated Metal Production -	2nd	11.5	11.0	10.6	4.6	8.5
Machinery (incl. Elec) -	2nd	28.0	27.5	25.9	1.8	8.1
Transport. Equip. -	2nd	47.8	46.7	41.9	2.4	14.1
Aircraft and parts -	2nd	36.1	36.8	32.3	-.2	11.8
Nondurable Goods -	2nd	68.1	69.3	66.6	-1.7	2.3
Food & Kindred Prod. -	2nd	24.0	24.0	23.7	0	1.3
Meat Products -	2nd	10.9	10.7	10.3	1.9	5.8
Printing & Publishing -	2nd	17.4	18.0	17.2	-3.3	1.2
Petroleum & Coal -	2nd	4.2	4.2	4.0	0	5.0
Mining -	2nd	17.3	17.2	17.0	.6	1.8
Oil & Gas Extraction -	2nd	15.6	15.6	15.3	0	2.0
Contract Construction -	2nd	41.0	36.2	39.3	13.3	1.8
Trans. & Public Utilities -	2nd	64.0	62.8	61.6	1.9	3.9
Wholesale trade -	2nd	65.6	64.7	64.4	1.4	1.9
Retail Trade -	2nd	161.5	157.6	159.6	2.5	1.2
Finance, Ins., & Real Estate -	2nd	49.7	49.0	49.6	1.4	0.2
Services -	2nd	175.8	172.9	174.4	1.7	0.8
Federal Government -	2nd	27.4	25.9	26.0	5.8	5.4
State and Local Government -	2nd	164.0	163.9	163.3	0.1	0.4

Sources: BLS, KS. Dept. of Human Resources

TABLE FOUR: INCOME IN KANSAS
(Seasonally adjusted, at annual rates)

Account		Current Period	Previous Period	Year Ago	% Change From	
					Previous Period	Year Ago
A. Personal Income - Quarterly						
Total - mil. $	1st	32,751	30,916	28,971	5.9	13.1
Nonfarm Income - mil. $	1st	30,310	29,558	27,850	2.5	8.8
Farm Income - mil. $	1st	2,441	1,358	1,121	79.8	117.8
Average Weekly Earnings, Mfg.*- $...	1st	382	378	358	1.0	6.8
B. Earnings by Industry - Quarterly, in millions						
Nonfarm -	1st	20,023	19,499	18,233	2.7	9.8
Manufacturing -	1st	4,483	4,302	3,848	4.2	16.5
Durable Goods -	1st	2,850	2,707	2,374	5.3	20.1
Nondurable Goods -	1st	1,633	1,595	1,474	2.4	10.8
Mining -	1st	740	751	627	-1.5	18.0
Contract Construction -	1st	1,201	1,147	1,098	4.7	9.4
Trans. & Public Util. -	1st	1,995	1,942	1,881	2.7	6.1
Wholesale Trade -	1st	1,609	1,577	1,487	2.0	8.2
Retail Trade -	1st	1,920	1,901	1,769	1.0	8.5
Finance, Ins., & Real Est. -	1st	1,149	1,112	1,053	3.3	9.1
Services -	1st	3,437	1,112	3,030	1.9	13.4
Federal Government -	1st	614	578	589	6.2	4.2
State & Local Gov. -	1st	2,288	2.240	2,263	2.1	1.1

Note: *Not seasonally adjusted.

Sources: BEA, KS. Dept. of Human Resources

TABLE FIVE: KANSAS RETAIL SALES SUBJECT TO SALES TAX
(Seasonally adjusted at annual rates)

Source		Current Period	Previous Period	Year Ago	% Change from	
					Previous Period	Year Ago
A. Business Classification - Monthly, in millions.						
Apparel -	APR	24.7	34.2	25.9	-27.8	-4.6
Automotive -	APR	221.4	243.5	199.4	-9.1	11.0
Food -	APR	283.2	313.2	229.6	-9.6	23.3
Furniture -	APR	58.8	67.5	40.5	-12.9	45.2
General Merchandise -	APR	108.3	198.6	137.6	-45.5	-21.3
Lumber & Building Materials -	APR	77.5	97.3	68.1	-20.3	13.8
Prof. & Pers. Service -	APR	53.7	63.3	51.6	-15.2	4.1
Public Utilities -	APR	84.4	70.7	64.3	19.4	31.3
Unclassified -	APR	91.2	117.6	93.0	-22.4	-1.9
Farm and Garden Products -	APR	1.0	1.0	0.8	0.0	25.0
Manufacturing and Trading -	APR	72.9	90.3	60.8	-19.3	19.9
Miscellaneous -	APR	4.4	4.6	4.8	-4.3	-8.3
Total -	APR	1,081.5	1,301.9	976.3	-16.9	10.8

Note: Retail sales figures are based on sales tax collections. Actual and reported retail sales may vary.

Souces: KS. Dept. of Revenue

TABLE SIX: EMPLOYMENT AND SALES FOR SMSAs AND COUNTIES
(Seasonally adjusted)

Area		Current Period	Previous Period	Year Ago	% Change from	
					Previous Period	Year Ago
A. Wichita SMSA - Quarterly						
Civilian Labor Force - tho	2nd	226.2	218.2	217.8	3.7	3.9
Employed - tho	2nd	214.2	207.9	202.7	3.0	5.7
Farm - tho	2nd	2.6	1.9	2.7	36.8	-3.7
Unemployed - tho	2nd	12.0	10.3	15.1	16.5	-20.5
Rate - %	2nd	5.3	4.7	6.9	-	-
Retail Sales* - mil. $	APR.	231.0	na	192.5	-	20.0
B. Kansas Portion of Kansas City SMSA - Quarterly						
Civilian Labor Force - tho	JUNE	231.3	227.1	226.5	1.9	2.1
Employed - tho	JUNE	220.9	216.6	214.6	2.0	2.9
Farm - tho	JUNE	1.6	1.4	1.7	14.3	-5.9
Unemployed - tho	JUNE	10.4	10.5	11.9	-.9	-12.6
Rate - %	JUNE	4.5	4.6	5.3	-	-
Retail Sales - mil. $	APR.	202.1	na	172.7	-	17.0
C. Topeka SMSA - Quarterly						
Civilian Labor Force - tho.	2nd	95.5	92.5	94.2	3.2	1.4
Employed - tho	2nd	90.6	87.5	88.8	3.5	2.0
Farm - tho	2nd	1.9	1.4	1.9	35.7	0
Unemployed - tho	2nd	4.9	4.9	5.4	0	-9.3
Rate - %	2nd	5.1	5.3	5.7	-	-
Retail Sales - mil. $	APR.	78.3	na	64.1	-	22.2
D. Lawrence SMSA - Quarterly						
Civilian Labor Force - tho	2nd	33.7	33.4	33.5	.9	.6
Employed - tho	2nd	32.2	32.1	32.0	.3	.6
Farm - tho	2nd	.8	.6	.8	33.3	0
Unemployed - tho	2nd	1.4	1.3	1.5	7.7	-6.7
Rate - %	2nd	4.3	3.8	4.5	-	-
Retail Sales - mil. $	APR.	23.8	na	19.5	-	22.1
E. Riley County--Manhattan Area - Quarterly						
Civilian Labor Force - tho	2nd	22.0	22.1	22.0	-.5	0
Employed - tho	2nd	21.4	21.4	21.2	0	.9
Farm - tho	2nd	1.1	.8	1.1	37.5	0
Unemployed - tho	2nd	.7	.7	.7	0	0
Rate - %	2nd	3.0	3.3	3.2	-	-
Retail Sales - mil. $	APR.	14.0	na	13.4	-	4.5
F. Reno County--Hutchinson Area - Quarterly						
Civilian Labor Force - tho	2nd	29.8	29.1	30.1	2.4	-1.0
Employed - tho	2nd	28.3	27.5	27.9	2.9	1.4
Farm - tho	2nd	1.4	1.0	1.4	40.0	0
Unemployed - tho	2nd	1.6	1.7	2.2	-5.9	-27.3
Rate - %	2nd	5.1	5.7	7.2	-	-
Retail Sales - mil. $	APR.	28.0	na	21.8	-	28.4
G. Crawford County--Pittsburg Area - Quarterly						
Civilian Labor Force - tho	2nd	16.5	16.1	16.9	2.5	-2.4
Employed - tho	2nd	15.5	15.1	15.8	2.7	-1.9
Farm - tho	2nd	.9	.7	.9	28.6	0
Unemployed - tho	2nd	1.1	1.0	1.1	10.0	0
Rate - %	2nd	6.3	6.3	6.5	-	-
Retail Sales - mil. $	APR.	12.1	na	11.2	-	8.0
H. Lyon County--Emporia Area - Quarterly						
Civilian Labor Force - tho	2nd	17.7	17.3	17.8	2.3	-.6
Employed - tho	2nd	17.0	16.5	16.8	3.0	1.2
Farm - tho	2nd	.8	.6	.9	33.3	11.1
Unemployed - tho	2nd	.7	.8	.9	-12.5	22.2
Rate - %	2nd	3.9	4.5	5.2	-	-
Retail Sales - mil. $	APR.	15.9	na	11.7	-	35.9
I. Saline County--Salina Area - Quarterly						
Civilian Labor Force - tho	2nd	26.0	25.3	26.0	2.8	0
Employed - tho	2nd	24.6	24.0	24.6	2.5	0
Farm - tho	2nd	.7	.5	.7	40.0	0
Unemployed - tho	2nd	1.4	1.4	1.5	0	6.7
Rate - %	2nd	5.4	5.4	6.0	-	-
Retail Sales - mil. $	APR.	26.1	na	24.5	-	6.5
J. Barton County--Great Bend Area - Quarterly						
Civilian Labor Force - tho	2nd	18.7	18.2	18.7	2.8	0
Employed - tho	2nd	18.0	17.5	17.7	2.8	1.7
Farm - tho	2nd	.9	.7	1.0	28.6	-10.0
Unemployed - tho	2nd	.7	.7	1.0	0	-30.0
Rate - %	2nd	3.8	3.8	5.2	0	-26.9

TABLE SIX: (cont.)

Area		Current Period	Previous Period	Year Ago	Previous Period	Year Ago
Retail Sales - mil. $	APR.	23.5	na	18.6	-	26.3
K. Montgomery County--Coffeyville Area - Quarterly						
Civilian Labor Force - tho	2nd	19.1	18.6	19.5	2.7	-2.0
Employed - tho	2nd	17.9	17.2	17.0	4.0	5.3
Farm - tho	2nd	.6	.5	.6	20.0	0
Unemployed - tho	2nd	1.2	1.3	2.4	-7.7	-50.0
Rate - %	2nd	6.1	7.0	12.3	-	-
Retail Sales - mil. $	APR.	14.8	na	13.6	-	8.8

Source: KS. Dept. of Human Resources, KS. Dept. of Revenue

TABLE SEVEN: KANSAS AGRICULTURAL INDICATORS

					% Change from	
Item		Current Period	Previous Period	Year Ago	Previous Period	Year Ago
A. Prices Received - Monthly						
All Farm Products - 1977=100	JUL	164	164	149	0	10.07
All Crops - do.	JUL	154	158	153	-2.53	.65
Wheat - $/bu.	JUL	3.26	3.34	3.28	-2.4	-.61
Sorghum Grain - $/cwt.	JUL	4.98	5.05	5.11	-1.39	-2.54
Corn - $/bu.	JUL	3.34	3.34	3.31	0	.91
Soybeans - do.	JUL	6.63	7.56	6.16	-12.3	7.63
All Hay - $/ton	JUL	66.00	71.00	59.00	-7.04	11.86
Livestock and Products - 1977=100	JUL	170	167	147	1.8	15.65
All Beef Cattle - $/cwt.	JUL	63.00	62.00	53.90	1.61	16.88
Steers & Heifers - do.	JUL	64.50	63.20	56.70	2.06	13.76
Calves - do.	JUL	58.60	59.10	56.60	-.85	3.53
Hogs - do.	JUL	50.70	48.40	43.40	4.75	16.82
Milk - do.	JUL	13.20	13.30	13.30	-.75	-.75
B. Prices Paid - Monthly						
Prices Paid - 1977=100	JUL	166	166	160	0	3.75
Parity Ratio - 1910-14=100	JUL	57	58	54	-1.7	5.6

Source: KS. Crop and Livestock Reporting Service.

TABLE EIGHT: BANKING ACTIVITY IN KANSAS

					% Change from	
Area		Current Period	Previous Period	Year Ago	Previous Period	Year Ago
A. Federal Reserve Member Banks						
Kansas - Monthly, in millions						
Total Deposits -	JUN	24,972	24,769	22,558	0.8	10.7
Total Checkable -	JUN	4,995	4,960	4,912	0.7	1.7
Demand Deposits -	JUN	3,024	3,027	3,114	-0.1	-2.9
Other Checkable -	JUN	1,971	1,933	1,795	2.0	9.8
Small Time & Savings -	JUN	16,701	16,572	15,114	0.8	10.5
Large Time -	JUN	3,276	3,237	2,532	1.2	29.4
Kansas City, KS - Monthly, in millions						
Total Loans -	JUN	330	323	230	2.1	43.3
Real Estate -	JUN	76	79	35	-4.1	116.4
Commercial & Industrial -	JUN	113	107	64	4.7	75.8
Consumer -	JUN	45	45	41	0.0	10.6
Total Deposits -	JUN	422	419	360	0.6	17.0
Demand Deposits -	JUN	90	96	105	-6.0	-14.6
Time & Savings -	JUN	172	169	147	1.8	16.6
Topeka - Monthly, in millions						
Total Loans -	JUN	362	357	310	1.5	16.9
Real Estate -	JUN	86	70	53	22.8	63.2
Commercial & Industrial -	JUN	182	189	163	-3.8	11.2
Consumer -	JUN	76	60	50	28.0	53.1
Total Deposits -	JUN	497	477	460	4.1	8.0
Demand Deposits -	JUN	153	144	153	6.2	-0.2
Time & Savings -	JUN	208	206	203	0.7	2.4

TABLE EIGHT: (CONT.)

Area		Current Period	Previous Period	Year Ago	Previous Period	Year Ago
Wichita - Monthly, in millions						
Total Loans -	JUN	1,061	1,047	888	1.3	
Real Estate -	JUN	161	159	135	1.2	
Commercial & Industrial -	JUN	488	486	406	0.4	
Consumer -	JUN	273	265	229	2.9	
Total Deposits -	JUN	1,510	1,504	1,398	0.4	
Demand Deposits -	JUN	426	439	473	-2.9	
Time & Savings -	JUN	628	632	613	-0.6	
B. All Commercial Banks						
Kansas - Monthly, in millions						
Total Loans -	83-II	9,973.1	8,952.5	9,174.9	11.4	8.7
Total Deposits -	83-II	16,857.1	15,451.1	14,957.5	9.1	12.7
Demand Deposits -	83-II	3,160.1	3,012.5	3,211.5	4.9	-1.6
Time & Savings -	83-II	13,697.0	12,451.8	11,747.0	10.0	16.6
Kansas City, KS - Monthly, in millions						
Total Loans -	83-II	1,665.6	1,467.5	1,453.4	13.5	14.6
Real Estate -	83-II	604.5	534.5	509.7	13.1	18.6
Commercial & Industrial -	83-II	517.0	431.6	397.4	19.8	30.1
Consumer -	83-II	404.3	351.9	371.6	14.9	8.8
Total Deposits -	83-II	2,612.8	2,296.0	2,250.5	13.8	16.1
Demand Deposits -	83-II	477.6	433.0	454.0	10.3	5.2
Time & Savings -	83-II	2,135.2	1,863.2	1,795.8	14.6	18.9
Topeka - Monthly, in millions						
Total Loans -	83-II	645.4	621.8	611.8	3.8	5.5
Real Estate -	83-II	153.9	144.8	136.6	6.3	12.7
Commercial & Industrial -	83-II	267.8	263.1	237.8	1.8	12.6
Consumer -	83-II	124.8	118.0	119.4	5.8	4.5
Total Deposits -	83-II	1,046.9	1,008.6	938.1	3.8	11.6
Demand Deposits -	83-II	249.7	260.9	237.1	-4.3	5.3
Time & Savings -	83-II	797.1	747.7	698.6	6.6	14.1
Wichita - Monthly, in millions						
Total Loans -	83-II	1,647.0	1,556.7	1,519.4	5.8	8.4
Real Estate -	83-II	371.6	350.1	333.2	6.2	11.6
Commercial & Industrial -	83-II	725.2	682.9	665.3	6.2	9.0
Consumer -	83-II	366.5	351.7	359.0	4.2	2.1
Total Deposits -	83-II	2,739.6	2,685.0	2,359.7	2.0	16.1
Demand Deposits -	83-II	786.0	750.0	748.6	4.8	5.0
Time & Savings -	83-II	1,953.5	1,928,4	1,610.5	1.3	21.3

TABLE NINE: SAVINGS AND LOANS ACTIVITY IN KANSAS

Area		Current Period	Previous Period	Year Ago	% Change From	
					Previous Period	Year Ago
A. Kansas - Monthly						
Total Assets - bil. $	JUNE	10.8	8.8	NA	227.0	-
Net Savings - mil. $	JUNE	34.5	36.4	NA	-5.2	-
B. Kansas City, KS - Monthly, in millions						
Total Assets -	JUNE	1,384.0	1,169.0	NA	18.4	-
Net Savings -	JUNE	1.0	3.3	NA	-69.7	-
C. Topeka - Monthly, in millions						
Total Assets -	JUNE	2,386.0	2,193.0	NA	8.8	-
Net Savings -	JUNE	-2.4	9.8	NA	-124.5	-
D. Wichita - Monthly, in millions						
Total Assets -	JUNE	1,802.0	1,464.0	NA	23.1 -	-
Net Savings -	JUNE	16.0	4.2	NA	281.0	-

Source: Federal Home Loan Bank of Topeka.

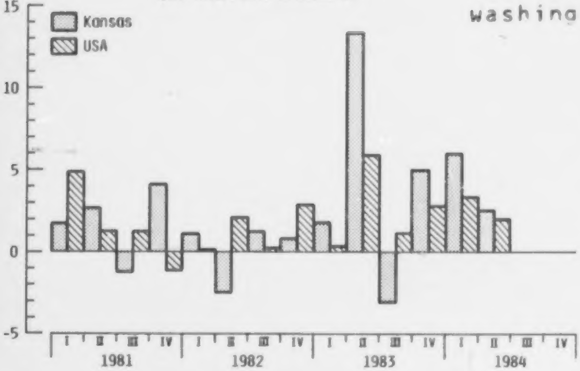
The University of Kansas
Kansas Business Review
Summer 1984, Vol. 7, No. 4

Published quarterly by the University
of Kansas, The Institute for Economic
and Business Research, Lawrence, Kansas 66045

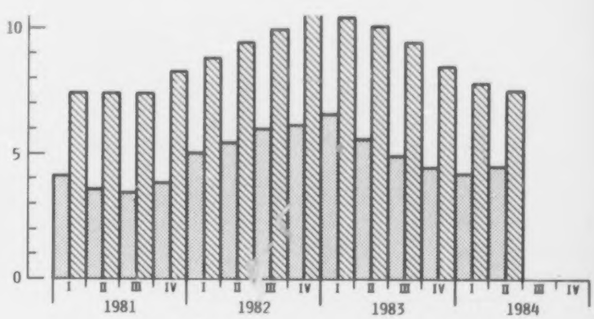
Nonprofit Organization
U.S. Postage
PAID
Lawrence, Kansas
Permit No. 65

congressional info services/sri
4520 east-west hi-way #800
washington, dc 20014

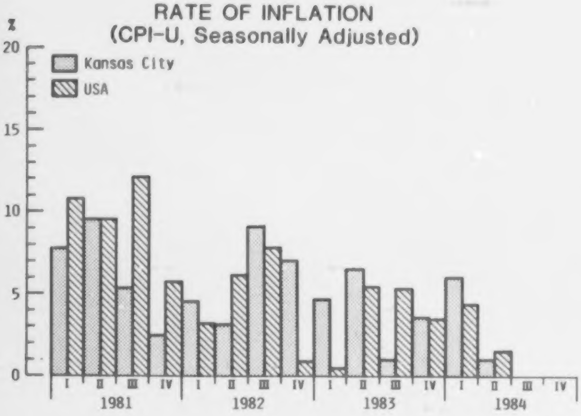
GROWTH OF RETAIL SALES
(In Current Dollars)



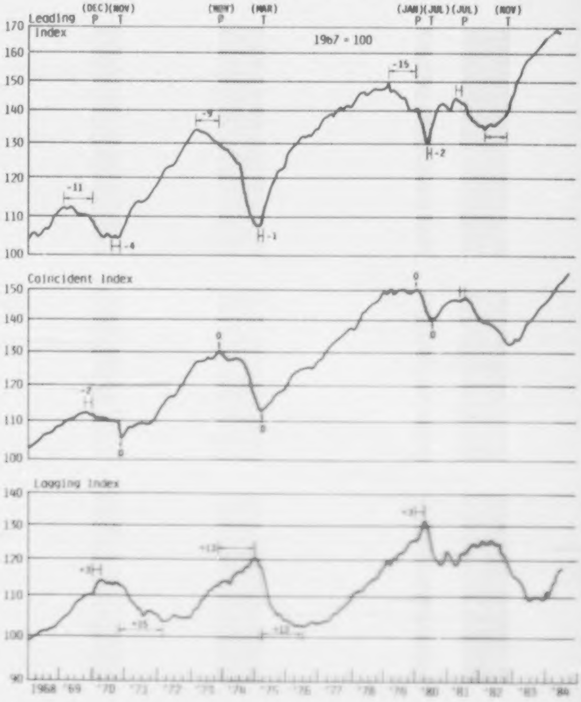
T RATE



RATE OF INFLATION
(CPI-U, Seasonally Adjusted)



COMPOSITE INDEXES



AVERAGE ANNUAL GROWTH RATE
OF GNP (1972 Dollars)